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RECENT DEVELOPMENTS RELATED TO TRANSNATIONAL CORPORATIONS AND INTERNATIONAL ECONOMIC RELATIONS

The triad in foreign direct investment

Report of the Secretary-General

SUMMARY

Worldwide flows of foreign direct investment continued to grow rapidly towards the end of the 1980s, reaching a level of nearly $200 billion in 1989, for a total world stock of $1.5 trillion. Of total flows, $163 billion were invested in developed countries and $30 billion in developing countries. Ten developing countries accounted for three fourths of total inflows to developing countries.

The present report addresses itself to the global structure of foreign direct investment, focusing on the role of the triad (the United States of America, the European Community (EC) and Japan), and the policy implications that stem from it. The major findings are are follows:

(a) The bipolar pattern of foreign direct investment of the early 1980s had been transformed by the end of the 1980s into one dominated by the triad, which accounted consistently for some 80 per cent of worldwide outward stocks and flows;

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* E/C.10/1991/1.

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(b) Integration of foreign direct investment within EC has reached such a level that EC can now be properly considered a single home region. If current trends continue, EC could eventually surpass the United States as the most important host region. Japan, which invests more abroad than does the United States in terms of flows, could soon surpass the United States as a home country in terms of stock;

(c) The low level of foreign direct investment in Japan stands out as a serious imbalance against an otherwise growing convergence of the triad members in outward and inward foreign direct investment;

(d) The rate of growth of foreign direct investment within the triad has outpaced that in the rest of the world. The increasing share of intra-triad stock reflects, in part, the growing strategic orientation of transnational corporations from the triad towards other triad members. Japanese transnational corporations in particular appear to be pursuing a strategy to build self-contained, regionally sustainable networks of affiliates in each of the triad members;

(e) The triad members individually also dominate foreign direct investment in most other countries. The pattern for over 30 host countries shows a clustering of these countries around a single triad member, typically located in the same region;

(f) Transnational corporations from the triad appear to be building integrated core networks of affiliates clustered around their home country.

The growing role of foreign direct investment, especially in its interrelationship with trade, technology and financial flows, makes it a new engine of growth and raises anew the question of governance, particularly in a multilateral context. At the same time, special policy measures need to be taken so that developing countries are not marginalized in the process. In doing so, it should be recognized that policies aimed at attracting transnational corporations through traditional liberalization and incentive instruments become less effective as virtually all countries move in this direction. Such policies need to be supplemented by improvements in economic locational advantages, including the enlargement and growth of regional markets.

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INTRODUCTION

> "The Old World was ruled by the logic of the triad: three times, three ages, three persons, three continents."
>
> Octavio Paz

1. Is the new world of international economic relations also ruled by the logic of a triad? Certainly, the concept of a triad has been prominent in recent discussions of the evolution of international trade relations and corporate strategies. 1/ Does this logic apply in the world of foreign direct investment as well? As yet, there have been no empirical investigations of this question. This issue, which carries important policy implications, is the focus of the present report.

2. Among the external factors which exert influence on international economic relations, foreign direct investment has become increasingly important. This is illustrated by the much faster growth of foreign direct investment than of both world trade and output, the intensifying efforts of virtually all countries to attract foreign direct investment (including investment in industries previously barred to foreign investors) and by the increasingly global strategies of transnational corporations. Furthermore, foreign direct investment is not only a factor of economic development in its own right, but it is also closely linked with trade, technology transfer and financial flows. The global pattern of foreign direct investment stocks and flows, along with the global patterns of trade, technology transfer and financial flows constitute, to a large degree, the structural attributes of the world economy.

3. Changing patterns of world trade, especially during the 1950s and 1960s, led to an increasing share of developed countries and a declining share of developing countries in total trade. Since trade is an engine of economic growth and international competitiveness, the declining share of developing countries became a source of concern. This concern was addressed in multilateral forums. Worldwide efforts ensued to reverse these patterns, and changes were introduced in the multilateral trading system, notably through the establishment of preference systems for developing-country exports.

4. Some recent discussions and analysis of global trade patterns have investigated whether these patterns are characterized by trade blocs or integration groupings which facilitate market access for some countries while making access more difficult for others. For instance, the Trade and Development Report, 1989 prepared by the United Nations Conference on Trade and Development (UNCTAD), examined "tripolar trading blocs", while the 1990 report on international trade, prepared by the secretariat of the General Agreement on Tariffs and Trade (GATT), dealt with, among other things, trade blocs and "trade centres". 2/ This type of analysis has not yet been attempted for global foreign-direct-investment flows, although efforts in this direction have begun - for instance, in a recent analysis by UNCTAD of an investment-led trading bloc centred around Japan. 3/ Yet, a similar understanding of the global patterns of foreign direct investment is as

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important as a knowledge of trade patterns and has no less important policy implications. Such an understanding is crucial for meaningful multilateral actions in the area of foreign investment. In particular, the continuing fall in the share of developing countries in global flows points to the need for multilateral responses in the area of foreign direct investment.

5. Accordingly, the present report, which has been prepared in response to a request made by the Commission on Transnational Corporations at its sixteenth session, is a first attempt to examine the global structure of foreign direct investment and the policy implications that emanate from it. It focuses on the role of the triad (the United States of America, the European Community and Japan) in the global pattern of foreign direct investment during the 1980s. Section I describes briefly global trends in the area of foreign direct investment, where flows reached $196 billion in 1989 and world stock grew to nearly $1.5 trillion. Since some four fifths of outward stocks and flows are accounted for by the triad members, section II examines how the relative importance of the individual triad members changed during the 1980s (sect. II.A), how their interrelationships have developed (sect. II.B) and to what extent developing countries are linked in their foreign-direct-investment relationships to one of the triad members (sect. II.C). An effort is made to explain the resulting patterns, including through an analysis of corporate strategies. Section III starts by placing the analysis of foreign direct investment in the wider context of the world economic system, emphasizing the central role of foreign direct investment as an engine of growth in its interrelationships with trade, technology and financial flows (sect. III.A). It then raises the issue of governance, particularly in its multilateral dimension (sect. III.B), and pays special attention to implications for developing countries, including policy options to improve the flow of foreign direct investment to those countries (sect. III.C).

I. RECENT TRENDS

A. Global trends: increased importance of developed countries

6. After having nearly tripled between 1984 and 1987, worldwide outflows of foreign direct investment increased by 20 per cent in 1988 and 1989, to reach an absolute level of $196 billion (table 1). By 1989, the total worldwide stock of foreign direct investment had reached approximately $1.5 trillion. The five major home countries (France, Germany, Japan, United Kingdom of Great Britain and Northern Ireland, United States of America) maintained their 70 per cent share of total outflows throughout the 1980s. The United Kingdom, the United States and Japan were the largest home countries for outflows during the period 1980-1989, with the United Kingdom as the largest home country for the period overall, with average annual outflows of $17 billion (20 per cent of world outflows). However, outflows from Japan have exceeded those from the United States since 1986, and surpassed those from the United Kingdom in 1989, such that Japan replaced the United Kingdom as the largest source country of investment flows, accounting for 23 per cent of total worldwide outflows that year.

Table 1. Outflows of foreign direct investment from five major home countries, 1985-1989

	1985	1986	1987	1988	1989	1980-1984	1985-1989
Home country	Absolute value (billions of dollars)					Percentage shares	
France	2.2	5.4	9.2	14.5	19.4	6.0	8.0
Germany	5.0	10.1	9.2	11.2	13.5	7.4	7.8
Japan a/	6.4	14.5	19.5	34.2	44.2	8.9	18.8
United Kingdom	11.1	16.5	31.1	37.0	32.0	19.4	20.2
United States b/	8.9	13.8	28.0	13.3	26.5	28.1	14.3
Total	33.7	60.2	97.1	110.2	135.6	69.8	69.1
Developed countries	52.1	84.7	132.6	155.4	187.1	98.4	96.8
Developing countries	1.2	1.7	2.4	5.9	8.9	1.6	3.2
All countries	53.3	86.5	135.0	161.3	196.1	100.0	100.0

Source: International Monetary Fund, balance-of-payments tape, retrieved on 10 January 1991.

a/ Data for Japan do not include reinvested earnings.

b/ Excluding outflows to the finance (except banking), insurance, and real estate sectors of the Netherlands Antilles; also excluding currency translation adjustments.

7. Foreign-direct-investment inflows to developed countries have grown at an average annual rate of 25 per cent since 1983, to reach a value of $163 billion in 1989. The five major home countries, with the exception of Japan, are also the largest host countries, with an average share of 57 per cent of world flows during the 1980s.

B. Developing countries

8. Foreign-direct-investment inflows to the developing countries have grown consistently since 1984, posting an average annual growth rate of 16 per cent to reach $30 billion in 1989 (see table 2). In spite of a near doubling of average annual flows to the developing countries between 1980-1984 and 1985-1989, their share in worldwide inflows between these two periods fell from 25 per cent to 19 per cent. Ten developing economies maintained a share of about three fourths of total inflows to developing countries throughout the 1980s. The 10 and their respective shares of the $16 billion in average annual inflows to developing

Table 2. Inflows of foreign direct investment to developing regions, 1980-1984, 1985-1989 and 1988-1989

Host region	1980-1984	1985-1989	1988-1989	1980-1984	1985-1989	1988-1989
	Absolute value (billions of dollars)			Percentage share		
All countries	49.70	119.00	173.00	100.0	100.0	100.0
Developing countries	12.50	22.20	29.20	25.2	18.6	16.9
Africa	1.20	2.60	3.20	2.4	2.2	1.9
Latin America and Caribbean	6.10	8.30	10.00	12.3	7.6	5.8
East, South and South-East Asia	4.70	10.70	15.20	9.4	9.0	8.8
Oceania	0.13	0.14	0.20	0.3	0.1	0.1
West Asia	0.37	0.40	0.54	0.8	0.3	0.3
Other a/	0.04	0.03	0.05	0.07	0.03	0.03
Ten largest host countries	9.00	14.30	19.20	18.1	12.0	11.1
Least developed countries	0.19	0.15	0.17	0.4	0.1	0.1

Source: Estimates made by the United Nations Centre on Transnational Corporations, based on International Monetary Fund balance-of-payments tape, retrieved on 10 January 1991, estimates made by the Organisation for Economic Cooperation and Development and national sources.

a/ Including Malta and Yugoslavia.

countries during the period 1980-1989 (excluding tax havens) are Singapore (12 per cent), Brazil (12 per cent), Mexico (11 per cent), China (10 per cent), Hong Kong (7 per cent), Malaysia (6 per cent), Egypt (6 per cent), Argentina (4 per cent), Thailand (3 per cent) and Colombia (3 per cent). 4/

9. While the shares of Africa and East, South and South-East Asia in total worldwide inflows remained stable during the periods 1980-1984 and 1985-1989, the share of Latin America in total world inflows declined from 12 per cent to 7 per cent, although in absolute terms inflows to Latin American increased. As a share of inflows to only developing countries, Latin America also experienced a substantial decline, from 49 per cent to 38 per cent, while the corresponding share of South-East Asia increased from 37 per cent to 48 per cent. Continued debt-related problems in Latin America are in some measure behind the decade-long decline in the region's share of both worldwide inflows and flows to developing countries. The share of Africa in total average annual inflows to developing countries increased from 9 per cent in 1980-1984 to 12 per cent in 1985-1989, with oil-exporting countries in Africa accounting for the majority of the increase.

10. The least developed countries accounted for 0.7 per cent of average annual inflows to developing countries in 1985-1989, down from 1.5 per cent in 1980-1984. Since flows to developing countries are highly concentrated in newly industrialized and resource-rich countries, the position of the least developed countries is not likely to improve in the foreseeable future.

11. Overall, net resource transfers through foreign direct investment to developing countries have shown a reversal from -$1.5 billion in 1980-1984 to $3.5 billion in 1985-1988. 5/ This shift is due to a decrease in repatriated dividend and profit payments coupled with increased foreign-direct-investment inflows. The positive transfer on account of foreign direct investment contrasts with negative transfers exceeding $30 billion in both these periods on account of private credit.

12. By the end of 1990, virtually all countries in Central and Eastern Europe had passed legislation encouraging foreign direct investment. The number of joint ventures in Czechoslovakia, Hungary, Poland, the USSR and Yugoslavia grew rapidly in 1990, registering more than 9,000 by the end of the year, compared with about 3,035 at the beginning of the year. 6/ Nevertheless, very few of these ventures have actually commenced operations; less than 10 per cent, for example, have done so in the USSR. 7/ The current home countries, most of which are in Western Europe, are likely to remain the largest investors over the next five years, although several Japanese companies surveyed have indicated that they plan to invest considerable amounts in Central and Eastern Europe. 8/ However, the growth in the number of new joint ventures is likely to decline compared with 1990, given the current climate of deteriorating conditions and inadequate infrastructure, coupled with recessionary forces in the United States and Western Europe.

II. PATTERNS OF FOREIGN DIRECT INVESTMENT IN THE TRIAD

A. Triad members: the United States, the European Community and Japan

13. In the early 1980s, the global pattern of foreign direct investment could be characterized as bipolar, dominated by the United States and the European Community (EC), with the latter not yet fully integrated in terms of foreign-direct-investment flows. By the beginning of the 1990s, Japan had emerged as an equally important foreign-direct-investment power, at least as far as outward flows were concerned. As a result, the global pattern of foreign direct investment can now be characterized as tripolar, with EC, the United States and Japan being the members of the triad. The triad accounts for some four fifths of total outward stocks and flows, a percentage substantially higher than in the area of trade, where the triad accounted for one half of total world trade during the 1980s. Furthermore, while other countries have somewhat improved their relative position as outward foreign investors (although the triad still accounts for over 80 per cent of outward world stock), a growing share of worldwide investment is being concentrated in the triad itself (table 3).

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Table 3. Foreign direct investment to/from the European Community, the United States and Japan, 1980-1989

	Stock				Flow (annual average)			
	Outward		Inward		Outward		Inward	
	1980	1987	1980	1987	1980 1984	1985 1989	1980 1984	1985 1989
EC (excluding intra-EC foreign direct investment)								
Billions of dollars	153	343	143	244	18	39	10	19
Percentage of world total	33	37	31	26	41	37	23	19
United States								
Billions of dollars	220	322	83	272	14	18	19	46
Percentage of world total	46	35	18	28	31	17	41	46
Japan								
Billions of dollars	20	99	3	9	4	24	0	0
Percentage of world total	4	11	1	1	10	23	1	0
Triad								
Billions of dollars	398	765	230	525	36	81	29	65
Percentage of world total	84	83	50	55	82	77	64	65
World								
Billions of dollars	474	925	464	957	44	105	45	100
Memorandum item:								
EC (including intra-EC foreign direct investment)								
Billions of dollars	203	463	188	364	22	59	15	40
Percentage of world total	39	44	37	34	47	47	30	33

Source: Handbook on Foreign Direct Investment (to be issued as a United Nations publication).

Note: The data on outward stock for Japan for 1987 include reinvested profits. The data on intra-EC are estimates made by the United Nations Centre on Transnational Corporations, based on national sources. The data for EC do not include Greece, Ireland and Luxembourg.

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14. As a result of the shift from a bipolar to a tripolar pattern of foreign direct investment, the share of the United States in the triad's total outward stocks and flows decreased substantially in favour of the rising share of Japan; in terms of average outflows, Japan surpassed the United States during the second half of the 1980s by a substantial margin. These developments are examined in the following sections, which analyse the position of each triad member, current trends regarding intra-triad foreign direct investment and the foreign-direct-investment linkages between the triad and developing countries.

1. The United States and Japan

15. The United States is no longer the world's most important foreign investor, as it was in 1980. By 1987, EC had become the world's largest source of foreign direct investment in terms of both stock and flows, and Japan now invests more abroad than does the United States in terms of flows. At the same time as the role of the United States as a home country was declining, its role as a host country was growing; in fact, the overall rise in world foreign direct investment located in the triad is largely due to increased foreign direct investment located in the United States.

16. Over the same eight-year period, outflows of foreign direct investment from Japan increased nearly sixfold. In 1980, Japanese outflows were less than one third of the outflows from the United States; by 1988, they were one third higher. However, as a relative newcomer to the triad (at least in terms of foreign direct investment), Japan does not yet match the United States or EC in terms of outward stock, although it is likely that it will do so within the next decade. In contrast, foreign-direct-investment stock and flows into Japan have remained very low over the decade and explain the relatively low share (about one half) of worldwide inward stock located in the triad as a whole. In terms of its position as a host country, then, Japan is not an equal triad member, nor is it likely to become one until transnational corporations take further advantage of existing investment opportunities and the remaining barriers to such investment are lowered.

2. The European Community

17. During the decade of the 1980s, EC so increased its importance in the triad as a foreign investor that its share of total outward stock (37 per cent) is now slightly above that of the United States. Its relative position as a host region, in contrast, declined somewhat during the period, although in absolute terms foreign direct investment into EC grew at about 8 per cent a year. Much of the relative decline in EC as a host region and its concurrent rise as a home region can be explained by shifts in the bilateral foreign-direct-investment relationship between EC and the United States, in which investment from the former to the latter grew far more rapidly than flows in the reverse direction. These relationships are analysed in more detail below.

18. The 1992 programme to unify the regional market has provoked an unprecedented level of intraregional foreign direct investment within EC, such that intra-EC foreign direct investment increased from one quarter of total inward stock in EC in 1980 to one third in 1987, when it reached a level of approximately $120 billion. This rapid increase (about 15 per cent a year) outpaced the growth of intra-EC trade, which grew at only 9 per cent a year over the 1980s. Growing foreign direct investment between States members of EC means that it is increasingly possible to conceive of the region as a single, integrated home and host region for foreign direct investment to the rest of the world. The European Community is now the dominant investor in six EC countries, accounting for over 50 per cent of inward stock, whereas in 1980 it was dominant in only one EC country. 9/ The accelerated integration of the regional economy is further illustrated by the fact that intra-EC investment flows grew by an average of 38 per cent a year from 1980 to 1987, while flows from EC to the rest of the world grew at only 17 per cent a year.

19. In terms of corporate strategy, the increasing importance of intraregional foreign direct investment within EC can be characterized as the "regionalization" of EC industry (as explained below), motivated in large part by the 1992 programme of the unification of the regional market. The level of intra-EC foreign direct investment in EC is intensifying, since foreign direct investment flows within the region have grown substantially faster than inflows from the United States. Even though the latter have risen by about 24 per cent a year, the United States share of total inward foreign-direct-investment stock in EC declined from 42 per cent in 1980 to 36 per cent in 1987. This is a reflection of the already strong positions held by United States transnational corporations, many of which had already built up substantial pan-European capabilities by the 1970s.

20. Many EC transnational corporations, in contrast, are only now rationalizing their operations on a regional scale, in part encouraged by policies to foster pan-European firms (with moves by the Commission of the European Communities to develop EC-wide competition and company laws, for instance). The outcome of EC-wide industrial restructuring may be a shift from an economy characterized by a set of "national champions" which were protected on a national level, to one with a far smaller number of larger, regional "EC champions" which would look to EC rather than the home country as their principle market and their relevent policy and investment arena.

21. The restructuring of many EC industries reflects the strategies of EC transnational corporations to regionalize their activities, so that the EC region, rather than the firm's country of origin, will increasingly be considered the relevent home base. In those industries which were fragmented because of non-tariff barriers, such as telephone exchange manufacturing, semiconductors, computer services and white goods, intra-EC merger and acquisition activity has led to a sharp decline in the number of competitors and the creation of a handful of EC-based players. The need to achieve scale in the face of increasingly international competition has led to a number of large-scale cross-border acquisitions, particularly in the paper and motor vehicles industries. Consolidating distribution systems on a regional scale has been another important strategic objective of EC companies, such that the wholesale-distribution sector

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accounted for the highest number (76) of EC cross-border acquisitions in the first half of 1990. 10/

22. The above analysis suggests that the role of the triad in the world economy as measured by foreign-direct-investment stock and flows is significant and that its role as a recipient of total foreign direct investment has increased over the 1980s. Moreover, the triad's position in worldwide foreign direct investment is greater than its share of world trade flows; in the future, this discrepancy is likely to increase, given the high growth rates of foreign direct investment from and to the triad versus the growth of the triad's trade with the world. Within the triad, several shifts can be observed over the 1980s: the decline of the United States as the major home country and its emergence as the most important host country; the integration of EC through intraregional foreign direct investment and the rise of that region as the most important home country in the triad; and extremely high rates of growth of outflows from Japan, which are likely to give that country an equal, if not greater, role in the triad *vis-à-vis* the other two members in the near future.

B. Intra-triad investment relationships

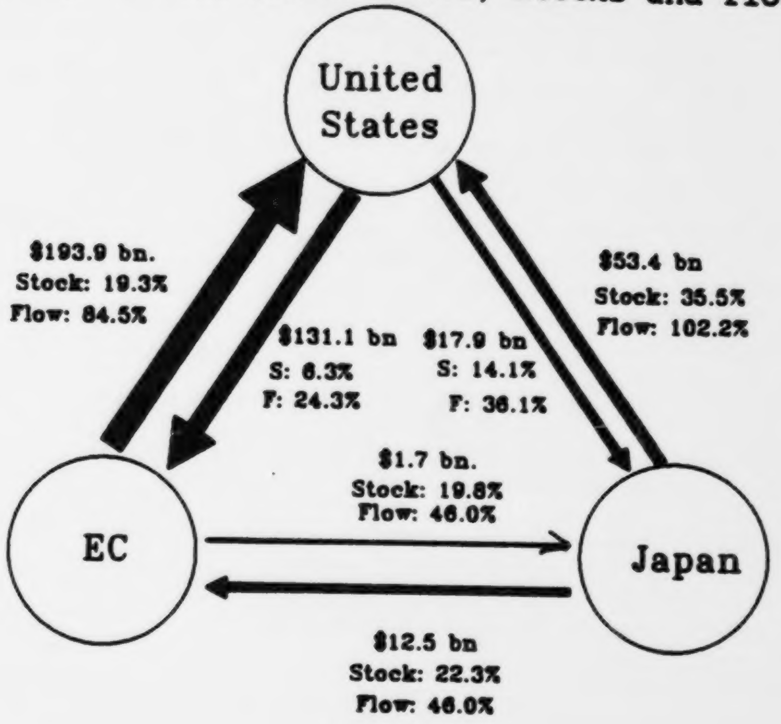
1. Significance of intra-triad foreign direct investment in global stocks and flows

23. Figure I shows that between 1980 and 1988 intra-triad foreign-direct-investment stock nearly tripled, from $142 billion to $410 billion. In 1980, the foreign-direct-investment stock within the triad accounted for 30 per cent of the worldwide stock of inward investment; by 1988, intra-triad stock had increased to an estimated 39 per cent of worldwide inward stock. Intra-triad trade also grew more rapidly than world trade, increasing from 13 per cent to 17 per cent of world trade over the period. Thus, in terms of both foreign direct investment and trade, interactions within the triad have outpaced interactions in the rest of the world and between the triad and the rest of the world, indicating a faster rate of integration among the triad than between the triad and the rest of the world.

24. The large and growing share of intra-triad activities in worldwide stock and flows of foreign direct investment as well as in worldwide trade flows can in large part be explained by the market size of the triad, a changing regulatory framework (particularly in EC) and emerging corporate strategies in the 1980s. Although growth of real gross domestic product (GDP) in the triad was only 3 per cent during the period 1980-1987, the triad's combined GDP accounted for $11 trillion, or 65 per cent of world GDP in 1987, with the United States, EC and Japan accounting for 26 per cent, 25 per cent and 14 per cent of worldwide GDP, respectively, 11/ The triad members are also among the world's most important trading areas, accounting for 50 per cent of world trade in 1989, with the United States, EC and Japan accounting for 21 per cent, 20 per cent and 9 per cent of total world trade, respectively (excluding intra-EC trade).

Figure I. Intra-triad foreign direct investment, 1988

(Dollar figures show 1988 stock; percentages show average annual growth rates, stocks and flows) a/


United States
EC
Japan
$193.9 bn.
Stock: 19.3%
Flow: 84.5%
$131.1 bn
S: 6.3%
F: 24.3%
$17.9 bn
S: 14.1%
F: 36.1%
$53.4 bn
Stock: 35.5%
Flow: 102.2%
$1.7 bn.
Stock: 19.8%
Flow: 46.0%
$12.5 bn
Stock: 22.3%
Flow: 46.0%

Source: Handbook on Foreign Direct Investment (to be issued as a United Nations publication).

a/ Stock growth rates are for 1980 to 1988. Flow growth rates are for 1985 to 1989.

25. A changing regulatory framework also helps explain the rapid growth of intra-triad investment stocks and flows in the 1980s. In Europe, the 1992 single market programme has attracted foreign direct investment from many countries through the pull of projected market growth as well as the possibility (real or imagined) of future difficulties in exporting to the region from outside EC. In the United States, some of the growth of inward EC and Japanese investment can be explained by the relative openness of United States regulations governing inward foreign direct investment, coupled with a fall in the value of the dollar. Pressure to reduce Japan's trade surplus with the United States is also likely to have played a role. Finally, the growth of EC and United States investment into Japan could be attributed to a gradual relaxation of policies in Japan, in response to demands by its two key trade and investment partners.

26. Finally, the growth of intra-triad foreign direct investment can in part be explained by heightened competition between increasingly global transnational corporations in research- and technologically-intensive industries. In the 1980s, the economy of each triad member became increasingly linked to such industries as computers and electronics, specialty chemicals and communication equipment, whose growth is sustained through high and continuous expenditures in research and development. The growing significance of research- and technology-intensive industries in the economy of each triad member is an important factor in increased intra-triad foreign-direct-investment flows, as transnational corporations seek to gain access to new technologies, to join in alliances with firms with complementary technologies and to amortize their fixed research expenditures by expanding their market share.

2. Relative significance of intra-triad investment relationship segments

27. Figure I shows that, in terms of stock, the most important foreign-direct-investment relationship within the triad is between EC and the United States, which together accounted for 79 per cent of intra-triad foreign-direct-investment stock in 1988. However, Japan's share of intra-triad stock more than tripled in the 1980s, from 5 per cent in 1980 to 16 per cent in 1988. The United States was the most important host country for foreign direct investment from both Japan and EC. The following sections analyse the relative significance of bilateral intra-triad foreign-direct-investment relationships (expressed by stock data) and emerging trends which are reshaping those relationships (as expressed by size and growth of flows).

(a) Intra-triad foreign direct investment by the European Community

28. The European Community accounts for the largest share (48 per cent) of intra-triad foreign-direct-investment stock. Most of that investment is captured by EC investment in the United States; Japan, as a host country, accounts for less than 1 per cent of the EC intra-triad investment stock ($196 billion in 1988). The rapid rise of intra-EC foreign direct investment over the 1980s has not prevented an even more rapid rise in EC investment located in the United States: the latter, with $194 billion of inward stock from EC, is still a more important recipient of

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EC foreign direct investment than EC itself. Indeed, the size and growth of EC investment in the United States has been such that EC is now the largest home country in the triad. From a strategy point of view, many of these investments are aimed at gaining the critical mass which will propel EC companies to the status of global competitors, able to compete effectively with large American and Japanese transnational corporations. For instance, the French company Michelin's 1989 purchase of Uniroyal-Goodrich made it the world's largest tyre manufacturer; other major EC transnational corporations with substantial investments in the United States include ICI of the United Kingdom, Philips of the Netherlands, Rhône-Poulenc and Thomson of France and BASF of Germany. The United States market accounts for upwards of 30 per cent of sales for many of those companies, which also export hundreds of millions of dollars from their American subsidiaries to overseas markets. 12/

(b) Intra-triad foreign direct investment by the United States

29. In 1988, the United States had $149 billion (stock) invested in the triad, of which 88 per cent was located in EC. In terms of flows, foreign direct investment into Japan has grown rapidly (though from a small base), while growth of flows to EC, at 24 per cent a year, was the slowest growth rate of all flows within the triad. This is due in part to the strong foreign investment position in EC already attained by United States transnational corporations by the late 1980s. United States transnational corporations, many of which were world market leaders in the 1960s, have had substantial investments in EC since that time. They often tended to treat EC as a regional market from the outset and to devise single European strategies where appropriate. United States transnational corporations, therefore, do not face the intense pressure to make new investments in EC as do most Japanese transnational corporations, or to regionalize existing operations to prepare for the single market as do most European transnational corporations: many of them are already the leaders in key EC markets. Evidence of the pre-existing regional integration of United States transnational corporations networks in Europe is given by the fact that, by 1982 (three years before the 1992 programme was initiated), 51 per cent of the non-United States exports of EC-based United States affiliates went to other affiliates of the same parent, versus only 39 per cent for all United States affiliates worldwide, indicating a relatively high degree of cross-border vertical integration for the EC-based affiliates. Furthermore, 72 per cent of the non-United States exports of the latter were sold to other EC countries, indicating that most of the international integration of EC affiliates took place within EC itself. 13/

30. Notwithstanding this advantage of early rationalization, EC has grown as a key region for the globalization strategies of United States transnational corporations, as witnessed by the recent decision of IBM to move its communications headquarters from the United States to London. While organizational changes such as this are not captured in foreign-direct-investment data, they reflect a qualitative increase in the importance of EC as a location for foreign direct investment by United States transnational corporations.

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(c) Intra-triad foreign direct investment by Japan

31. While the absolute volume of Japanese foreign-direct-investment stock in the triad is still relatively low ($66 billion), growth of outflows in the late 1980s has been remarkable. According to approvals recorded in Japan, in the two-year period from March 1988 to March 1990, Japanese investment flows to EC were 13 per cent higher than the total flows over the previous 36 years combined; in the United States, Japanese flows during the period 1988-1989 exceeded by 8 per cent the total amount invested over the previous 36 years combined. 14/

32. These trends reflect, in part, a strategy being adopted by many Japanese companies to become regional "insiders" in the triad. In both EC and the United States, as well as in Asia, there is evidence that Japanese transnational corporations hope to build up regionally integrated, independently sustainable networks of overseas investments which would serve multiple strategic objectives: to ensure access to each of the three regions, which represent two of the world's largest markets (Europe and the United States) and its most dynamic region (Asia); to insulate Japanese transnational corporations from the threat (real or perceived) of protectionism against Japanese exports in the United States and Europe; and to leverage locational advantages in each of the three regions to increase trade with other markets - including Japan - so as to reduce Japan's trade surplus with its major trading partners (figure II).

33. Within the triad, the bulk of Japanese manufacturing investments are trade-replacing in nature, concentrated in industries such as automobiles and electronics. Japanese strategies in the United States and Europe are predominantly geared to serving local markets, with less than 5 per cent of sales exported to other countries, although this proportion may rise as Japanese affiliates mature. 15/ Recent evidence shows that Japanese transnational corporations are beginning to build networks of suppliers to serve their overseas affiliates and that they are increasingly replicating overseas the close, interfirm relationships within those networks that have been key to their successful growth in Japan. The overseas suppliers of Japanese affiliates in the United States and Europe are often themselves affiliates of Japanese companies. Trends thus indicate a rise in local content by Japanese affiliates located in the triad (though often achieved through sourcing from locally based Japanese suppliers), as well as rising independence from the parent in an effort to achieve "insider" status.

34. In 1989, EC surpassed the United States for the first time in terms of the growth of inward flows from Japan. This is a result of the rising strategic importance of EC for Japanese firms: a recent poll found that, between 1987 and 1989, the percentage of Japanese companies citing North America as the most important region for investment fell from 53 per cent to 43 per cent; those citing Asia remained stable at 42 per cent; and those citing EC as the most important investment location rose from 3 per cent to 12 per cent. 16/ This shift indicates a gradual weakening of the United States as the dominant triad member, as improved economic conditions and new opportunities in EC increase its relative position within the triad.

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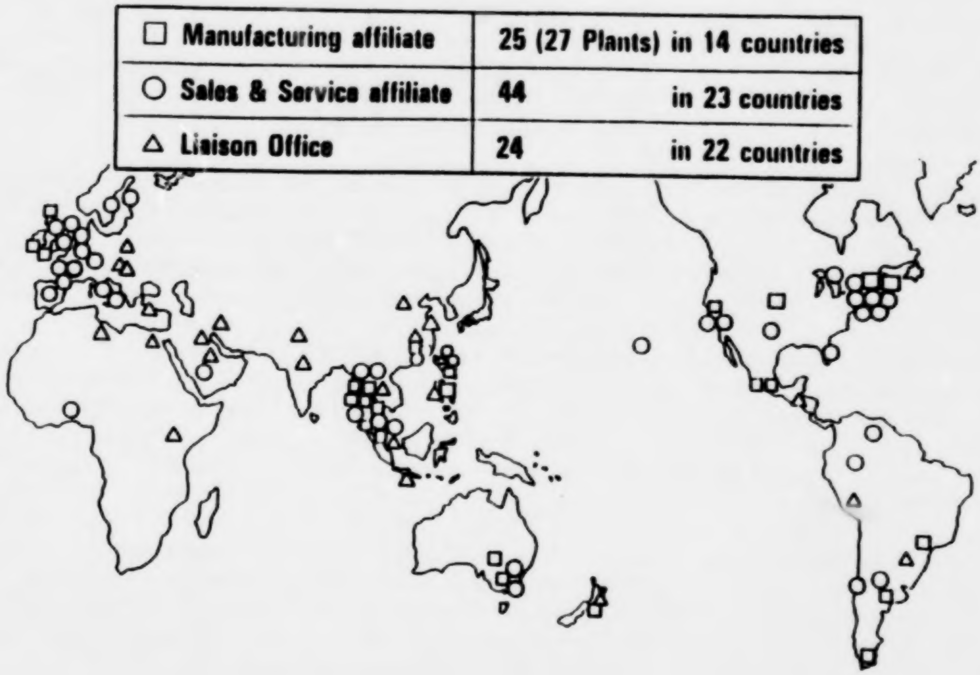
Figure II. Overseas network of affiliates of the NEC Corporation, 1989


□ Manufacturing affiliate
25 (27 Plants) in 14 countries
○ Sales & Service affiliate
44 in 23 countries
△ Liaison Office
24 in 22 countries

Source: NEC (Nippon Electric Company).

3. Conclusion: movement towards convergence within the triad?

35. In the early 1980s, it would have been difficult to characterize the United States, EC and Japan as forming a triad which dominated global foreign-direct-investment stocks and flows. The role of Japan was then relatively insignificant and EC was too fragmented, more a collection of 12 countries than an integrated regional economy. At that time, the United States was the single most important home and host country for foreign direct investment in the world economy. By the end of the 1980s, as the above data show, a triad had indeed emerged, at least in terms of flow data. Behind the emergence of a tripolar structure are the rapid growth of outward investment from Japan and the integration of EC, such that it now may properly be considered a single triad member. While by 1990 it appeared that the United States and EC were jointly the most important triad members, if current trends continue, EC could eventually surpass the United States as the most important host region in terms of stock (it is already the larger home region) and Japan could, within the next few years, surpass the United States as a home country, also in terms of stock (these changes could be mitigated if the growth of investment into EC slackens once the initial impact of the 1992 programme has occurred and if Japanese investment abroad slows down in the 1990s).

36. From a strategy point of view, the convergence of intra-triad foreign-direct-investment relationships points to the growing importance given to the triad by transnational corporations. This strategy, often referred to as "globalization", means that transnational corporations are increasingly regarding their non-domestic triad activities and their home-country operations as equally important. The recent Japanese strategy to become "regional insiders" in each leg of the triad is motivated both by efficiency reasons (country specialization and regional economies of scale) and by policy considerations (extraregional tariff and non-tariff barriers). If the Japanese foreign-direct-investment strategy proves successful, then the question arises whether EC and United States transnational corporations, in order to ensure competitive survival, will also have to adopt a three-legged strategy in each member of the triad. The incentive to do so will be greater if regional trade blocs are strengthened in Europe, North America and Asia so that achieving "insider" status would be an important competitive advantage to gaining access to those markets.

37. Against such a scenario, the low levels of investment into Japan stand out as a striking imbalance; such a situation might eventually lead to increased policy pressures on Japan to open its economy to more inward foreign investment from the other two triad members. It would also be likely that EC and, in particular, the United States, would respond to this potential competitive threat to their transnational corporations by utilizing strategic trade and foreign-direct-investment policy tools, in an attempt to attain a "level playing field" in bilateral foreign-direct-investment relationships with Japan.

C. The triad, developing and Eastern European countries

1. Foreign-direct-investment clusters of triad members

38. The triad was the main source of foreign direct investment to the rest of the world in the 1980s. Table 4 shows stock and flow data reported by some 30 host developing and Eastern European countries, which collectively account for about 16 per cent of world foreign-direct-investment inflows (77 per cent of inflows to all developing countries). Stock data, shown in section A of the table, reflect the historical activity of transnational corporations which has led to the current distribution of foreign direct investment; flow data, shown in section B, point to emerging trends which are likely to reshape the distribution of foreign-direct-investment stock in the future. The table is organized to show the relative position of each of the triad members from a host-country perspective by measuring the extent to which any single triad member dominates the inward investment of a host country. It reveals that for most host countries, a single triad member accounts for over half of total inward investment stocks and flows. Thus, the three triad members not only dominate foreign direct investment within the triad, but do so individually in most other countries as well. The foreign-direct-investment activities of the triad members are thus likely to have repercussions for the rest of the world, most of which is closely linked to one or more triad members as a host country.

39. Within this overall pattern, the association of host countries with home countries in the triad shifted in the 1980s - but, surprisingly, not by very much. These changes, which are best captured in flows rather than stocks of foreign direct investment, suggest a pattern whereby host countries located in the same geographical region are clustered around a single triad member in the same region. Thus, while the number of countries for which individual members of the triad dominate foreign direct investment has remained about the same over the 1980s, by the late 1980s the distribution of several of those countries had shifted (see figure III, which summarizes the data in table 4, sect. B).

40. From the viewpoint of corporate strategy, a parallel pattern is emerging, which is likely to further the trends noted above. Many transnational corporations in the triad appear to be adopting a similar strategic orientation, which might be termed a regional core network strategy. Such a strategy involves building up integrated networks of affiliates in each of the triad regions: North America, Asia and Europe, with operations in the triad member itself at the core of the integrated network. In some cases (particularly those of Japanese affiliates in Asia and United States affiliates in Mexico), there appears to be a rise in the level of value-added performed by overseas affiliates and in the latter's overall strategic importance to the parent company. Thus, the emerging pattern in the data, which shows countries in a region clustered around a single triad member, partly reflects the strategies of transnational corporations in the triad to build up regionally integrated networks of affiliates, clustered around their home country (figures II and III).

Table 4. Pattern of foreign direct investment from the triad to developing and Eastern European countries, 1980 and 1987

(Percentage share of foreign direct investment by a triad member in the total inward foreign direct investment of the country)

A. Stock data

Group I. Absolute or relative dominance by a triad member a/

United States				Japan				European Community			
1980		1987		1980		1987		1980		1987	
Mexico	69.0	Mexico	65.5	Rep. of Korea	60.5	Rep. of Korea	53.0	Nigeria	39.3	Nigeria	55.1
Uruguay	68.3			Indonesia	37.5	Indonesia	33.2			Kenya d/	78.8
Bolivia	67.0	Bolivia	71.5							S. Africa	66.3
Venezuela	58.6	Venezuela	55.3					Paraguay	32.3	Paraguay	46.2
Peru	55.9	Peru	49.1							Brazil	37.9
Ecuador	54.3	Ecuador	54.1							Uruguay	33.9
Colombia	54.1	Colombia	73.5					Bangladesh	81.4	Bangladesh	55.9
Chile	48.8	Chile	52.1					India	62.3	India	48.0
Philippines	54.6	Philippines	57.3					Singapore	32.3		
Hong Kong	40.2	Hong Kong	38.8					Malaysia	26.6		
Taiwan, Province of China	35.0									Viet Nam d/	57.2

Group II. Competing shares of two triad members b/

United States/Japan		United States/European Community		European Community/Japan	
1980	1987	1980	1987	1980	1987
Thailand (32.8/29.0)	Thailand (29.5/30.6)	Argentina (38.8/41.4)	Argentina (42.4/37.6)		Malaysia (24.0/20.1)
	Taiwan, Province of China (34.4/25.5)	Brazil (28.6/33.6)	Singapore (19.5/23.3)		
			Pakistan (23.5/26.8)		

Group III. Non-triad countries are the largest investors c/

East, South and South-East Asia				Australia				Other			
1980		1987		1980		1987		1980		1987	
China	38.8	China	63.9	Papua New Guinea	74.0	Papua New Guinea	55.1	Pakistan	32.3		
Sri Lanka	18.8	Sri Lanka	36.0								

Table 4 (continued)

B. Flow data

Group I. Absolute or relative dominance by a triad member a/

United States				Japan			European Community			
1980-1984		1985-1988		1980-1984	1985-1988		1980-1984		1985-1988	
Bolivia	79.3	Bolivia	82.1		Rep. of Korea	51.8	Pakistan	40.2	Viet Nam	57.2
Mexico	62.7	Mexico	60.5		Thailand	46.1	Bangladesh	35.9	Indonesia	28.9
Colombia	60.1	Colombia	98.1		Hong Kong	31.9				
Venezuela	59.6	Venezuela	44.7				Chile	45.1	Brazil	48.8
Argentina	50.3	Argentina	49.7		Fiji d/	47.2			Peru	23.0
Brazil	48.3									
Panama	42.8	Panama	54.3				Nigeria	60.2	Ghana d/	39.5
Peru	29.0									
		Chile	45.1						Yugoslavia d/	64.1
Hong Kong	55.8								Poland d/	63.2
Philippines	55.7	Philippines	61.5						Czechoslovakia d/	44.8
Singapore	51.6								Hungary d/	42.4
Rep. of Korea	46.6								USSR d/	38.3
Papua New Guinea	44.2	Papua New Guinea	42.7							
Taiwan, Province of China	37.1									
		Pakistan	51.3							
		Saudi Arabia d/	34.3							

Group II. Competing shares of two triad members b/

United States/Japan		Japan/European Community		United States/European Community	
1980-1984	1985-1988	1980-1984	1985-1988	1980-1984	1985-1988
Thailand (27.6/25.8)	Taiwan, Province of China (27.87/30.9)	Indonesia (22.1/24.4)			India (33.7/33.3)
	Singapore (38.60/39.2)				Nigeria (36.5/33.3)

Group III. Non-triad countries are the largest investors c/

South-East Asia				Other Western Europe				Other			
1980-1984		1985-1988		1980-1984		1985-1988		1980-1984		1985-1988	
China	67.0	China	61.0	Morocco	35.2	Morocco	40.0	Ecuador	34.8	Ecuador	36.0
Sri Lanka	37.5	Sri Lanka	32.4							Uruguay	56.8
Malaysia	22.2	Malaysia	30.8								
		Nepal d/	57.4								
		Mauritius	37.3								

(Source and footnotes on following page)

(Source and footnotes to table 4)

Source: Handbook on Foreign Direct Investment (to be issued as a United Nations publication).

a/ Group I: A triad member has absolute dominance in a host country if it accounts for more than 50 per cent of total inward foreign direct investment in that host country. A triad member has relative dominance in a host country if it is the largest foreign direct investor by a margin of at least 10 per cent more than the next largest investor.

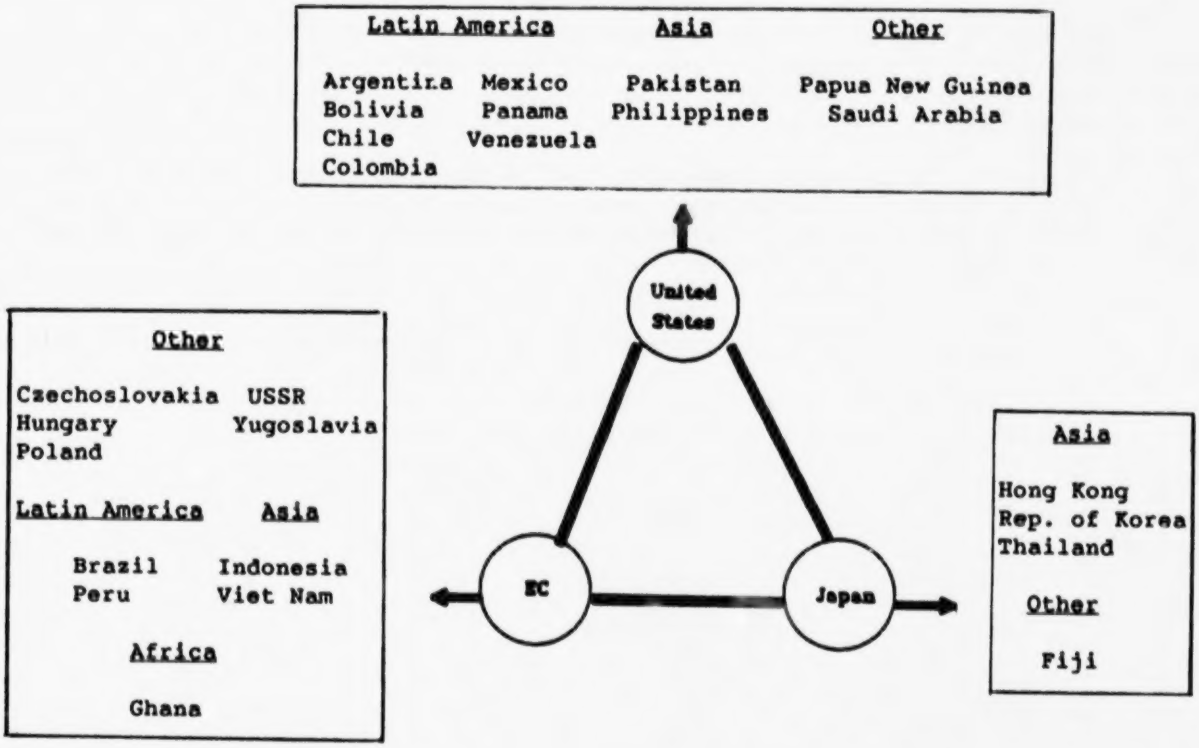
b/ Group II shows host countries for which two triad members hold comparable shares of total inward foreign direct investment and for which the triad as a whole constitutes the dominant foreign direct investor (greater than 50 per cent share of total inward foreign direct investment).

c/ Group III shows countries for which foreign direct investment by non-triad countries exceeds that of the triad. The home country and its share are indicated.

d/ Data are available for 1987 only.

Figure III. Foreign-direct-investment clusters of triad members, 1985-1989

(Countries for which a triad member accounts for over 50 per cent of average annual foreign-direct-investment inflows)


Latin America
Argentina
Bolivia
Chile
Colombia
Mexico
Panama
Venezuela
Asia
Pakistan
Philippines
Other
Papua New Guinea
Saudi Arabia
United States
Other
Czechoslovakia
Hungary
Poland
USSR
Yugoslavia
Latin America
Brazil
Peru
Asia
Indonesia
Viet Nam
Africa
Ghana
EC
Japan
Asia
Hong Kong
Rep. of Korea
Thailand
Other
Fiji

Source: Based on table 4.

(a) The United States cluster

41. Both flow and stock data for the 1980s indicate a decline in the number of host countries for which the United States is the dominant investor. Still, it remains the largest investor in many countries, most of them located in Central and South America. Indeed, the share of United States inward investment flows to those countries over the 1980s either increased or remained stable (with the exception of Brazil and Peru, where by the late 1980s EC held the largest share of inward flows, and Venezuela, where the United States remained dominant but where its share fell). However, there has been a clear decline in the relative position of the United States as the largest investor in five Asian host countries of areas (Hong Kong, the Republic of Korea, Taiwan Province of China, Thailand and Singapore). In the case of Taiwan Province of China, the United States went from a position of relative dominance to one of shared dominance in terms of inward stock; for the others, there was a fall in the United States share of inward flows. In nearly all cases, the loss in share was in favour of Japan, which by the late 1980s had either increased its share to hold a share comparable to that of the United States, or had replaced the United States altogether as the single dominant home country.

42. Within Latin America, Mexico is emerging as a key host country for many United States transnational corporations. While the position of the United States in Mexico remained stable over the 1980s, Mexico accounted for two thirds of the total 1987-1988 growth in employment by the developing country affiliates of United States transnational corporations. 17/ In the 1970s and early 1980s, United States transnational corporations were attracted by Mexico's geographical position, its low wage rates and the free-export zones (maquiladoras) on the United States-Mexican border. Now, several transnational corporations are responding to an improved economic climate and an increasingly skilled workforce by increasing the strategic importance of their Mexican subsidiaries in order to engage in production for both the Mexican and the United States market. Ford has recently invested $1 billion in its Mexican export subsidiary, a state-of-the-art manufacturing plant; IBM and Hewlett-Packard manufacture computers for both the local market and for export; and General Electric has integrated its Mexican joint venture with its Canadian and United States operations.

43. A free trade agreement, now being considered and favoured in principle by the United States and Mexico, is likely to stimulate increased United States foreign direct investment in Mexico, aimed at both local and export markets, while lessening the importance of maquiladoras. If such an agreement were to stipulate strict local-content requirements in order for goods to be freely traded in the region, then the Mexican subsidiaries of third countries (particularly from Japan and Europe, which have also invested substantially in Mexico) could be at a disadvantage vis-à-vis American transnational corporations, thus furthering the trend of a North American regional network. Such a trend could eventually spread to include other Latin American countries, as indicated by current discussions of a hemispheric free trade zone which would comprise North, Central and South America, thereby creating the largest free-trade area in the world.

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(b) The Japanese cluster

44. As indicated above, the data in table 4 show a gradual clustering of Asian host countries around Japan as a home country, although by the late 1980s Japan was the dominant investor in only two Asian countries in terms of stock and in only three in terms of flows (however, by the late 1980s no other triad member dominated flows to any Asian country, with the exception of EC in Indonesia and Viet Nam). Thus, Japan has not yet emerged as an equal member of the triad from the point of view of its non-triad foreign-direct-investment position, but current trends point to its growing importance, particularly in Asia.

45. The growing importance of Japan is illustrated by the fact that Japanese transnational corporations have nearly as many affiliates in Asia as they do in EC and the United States combined, although their strategy in Asia differs from that in the triad. Rather than being geared to the local market, as they are in the triad, the Asian affiliates of Japanese transnational corporations export nearly 50 per cent of their sales, with one third exported to third countries and the rest back to Japan. The dominant strategy until now has thus been to utilize the region as a low-cost export base; the high export ratio of Asian affiliates also points to the more mature phase of Japanese investments in that region (which began in the late 1960s in labour-intensive industries in which Japan had lost its competitive advantage). 18/

46. Trends in the strategies of Japanese transnational corporations indicate that, in the late 1980s and early 1990s, a new phase in Japanese investment in the region may be beginning, which is fuelling the rapid ascent of Japan as a home country. Since the appreciation of the yen in 1985, Japanese foreign direct investment into East and South-East Asia has grown so rapidly (faster than it did in Europe or the United States) that press reports have recently referred to the region as a "Japan-led economic bloc". 19/

47. While Japanese transnational corporations are still attracted to the developing Asian countries by low-cost labour, rapid demand growth in the region has increasingly been an important motive. In recent years, growth in the Asian newly industrialized countries has outpaced that in the countries members of the Organisation for Economic Cooperation and Development (OECD), a trend which is expected to continue in the 1990s. Rationalized, export-oriented strategies that take advantage of low labour costs are yielding to rationalized market-oriented investments aimed at capturing regional market shares. In those economies in which labour costs have risen, such as Hong Kong, the Republic of Korea, Singapore and Taiwan Province of China, total foreign direct investment has not declined, but rather manufacturing investments are giving way to investments in finance and services where low labour costs are less of a consideration.

48. The indication that transnational corporations from the triad are building up regional core networks around their home countries is best illustrated by the case of Japanese investment in the Asian region. In manufacturing, many Japanese transnational corporations are integrating their Asian affiliates on a regional scale, investing in complementary operations in different countries. Increasingly, these vertically integrated Asian production networks do not depend on Japanese

inputs. Singapore often serves as the regional headquarters and information and distribution centre (as well as the site for the most sophisticated manufacturing operations), with plants in less developed countries such as Malaysia, the Philippines and Thailand performing a range of discrete manufacturing operations. Such networks are often geared towards supplying the regional market as well as exporting to the three legs of the triad. In 1989, Toyota integrated its Asian subsidiaries (in four countries members of the Association of South-East Asian Nations (ASEAN) with regional headquarters in Singapore) so that they can supply one another, rather than import components from the Japanese parent, which instead will import from the ASEAN affiliates; the strategy was prompted, in part, by a 1988 reduction in tariffs on intra-firm trade in the region. 20/ Japanese motor vehicles manufacturers direct their subsidiaries in each country to specialize in certain components and have negotiated with Governments to allow such output to be treated as if it were "domestic content". 21/ Such a strategy permits plant specialization, regional economies of scale and intra-firm trade for transnational corporations, and furthers regional economic integration among the ASEAN countries.

49. The Asian affiliates of Japanese transnational corporations are also significant exporters. Their export activities tend to be part of a global integration strategy by the parent firm: of the total exports of Asian affiliates to Japan, the United States and Europe, 76 per cent, 58 per cent and 51 per cent of those exports, respectively, went to other affiliates of the same Japanese parent. 22/ If current trends continue, it is likely that not only will Japanese transnational corporations come to dominate investment flows to East and South-East Asian countries, but that they will also account for a rising proportion of trade among those countries and between the region and the rest of the world.

(c) The European Community cluster

50. The data in table 4 show an increase in the number of host countries in which EC is the largest investor, at least in terms of flows, attesting to the rise of the EC position within the triad. In terms of stock, EC has maintained its share in those Asian and African countries where historical ties remain strong, although no particular regional pattern emerges from an analysis of those countries. However, in all of the countries in Eastern Europe for which data are available, EC is the dominant inward investor. At the end of 1989, EC members accounted for 1,570 or 48 per cent of a total number of 3,280 joint ventures in Hungary, Poland, Czechoslovakia and the USSR. 23/ In most of these countries, new equity investments build on long-standing non-equity relationships, particularly subcontracting arrangements. Thus, the opening of Eastern Europe to foreign investment appears to be leading to a similar clustering pattern as can be observed in Asia and Latin America. As with Japanese investments in Asia and United States investments in Mexico, EC investments in Eastern Europe are aimed at both capturing local demand and creating a production base from which to export to other countries. Unlike the first two instances, however, many investments in Eastern Europe must rely more on future potential than on present returns.

51. Using their pre-existing distribution and marketing channels, EC firms are in many cases striving to integrate their Eastern European operations into their current networks, with the 1992 single market programme of EC an added incentive to

extend production to the East. Fiat's strategy in the region, for instance, envisions an integrated trans-European network which will not only produce for Eastern European markets, but will strengthen Fiat's competitive position in EC through plant specialization and intra-firm trade. Although in the current climate the risk factor of Eastern European investments is high, many transnational corporations hope to gain "first-mover" advantages by setting up joint ventures with local firms. The growth of such investments may be limited by the number of existing firms able to cooperate with them, and could reach a plateau in a few years. Still, if current trends continue, the role of EC transnational corporations in Eastern Europe may come to resemble the relationships of Japanese transnational corporations with their Asian subsidiaries and United States transnational corporations with their Mexican subsidiaries: increasing value performed at the affiliate level and growing trade among parents and affiliates, trends which both respond to and reinforce parallel developments at the policy level to further integrate the economies of home and host countries.

(d) The newly-industrialized-countries cluster

52. Table 4 shows that the Asian newly industrialized countries have emerged in the 1980s as increasingly important foreign investors, particularly in the region itself, where newly industrialized countries are now the largest foreign investors in four less developed Asian countries (in terms of flows). Behind this rise are rising wage rates at home, appreciating currencies coupled with large balance-of-payments surpluses due to high export earnings, capital market liberalizations in Taiwan Province of China and the Republic of Korea and the loss of generalized system of preferences (GSP) status. Taiwan Province of China in particular has emerged as a major investor in the region, establishing production facilities in several countries in South-East Asia and in China, either directly or through affiliates in Hong Kong. In 1989, foreign direct investment outflows from Taiwan Province of China were four times the level of inflows. Foreign direct investment from Hong Kong has also grown rapidly since 1986 and, by one estimate, accounts for 10 per cent of all foreign direct investment in East Asia (excluding China). 24/ The newly industrialized countries are therefore emerging as important sources of foreign direct investment in Asia, which, along with Japanese investments in the region, will serve to further economic integration among the individual countries.

2. Explaining regional investment clusters

53. The data presented above indicate a continuing pattern of clustering of host countries in a region around a single home triad member located in the same region. According to theory, such a pattern is unlikely to occur; the distribution of foreign direct investment should reflect the location advantages of host countries, rather than their geographical proximity to a home country. While geographical factors are certainly important, other location advantages include the host country's natural endowments, its infrastructure and human resources, as well as those aspects of its policy environment which have an impact on foreign direct investment. Such factors are considered a primary determinant of why transnational corporations, having decided to invest abroad, will invest in one host country

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rather than another. A geographically based pattern of foreign direct investment would not be expected to occur since the type of foreign direct investment that transnational corporations wish to undertake, not the transnational corporations' country of origin, should determine the relevant location advantages of a host country. For resource-based foreign direct investment, for example, the availability of natural resources in the host country will be an important locational determinant for transnational corporations, irrespective of their country of origin. For export-oriented foreign direct investment, production costs and exchange-rate policy would be important factors. For foreign direct investment to serve the local market, the size and growth of domestic demand would be relevant (as discussed above, the locational advantage of market size is an important variable behind the high levels of foreign direct investment in the triad, since much of such investment is geared towards serving triad markets). Assuming a similar set of possible locations available to foreign investors, it would thus be expected that the distribution of global foreign-direct-investment stocks and flows would not disproportionately reflect investment from any individual triad member. Transnational corporations would invest in those host countries which best met their investment requirements, regardless of their country of origin. Therefore, no single triad member would be expected to emerge as the dominant investor in a particular host country.

54. However, other factors may play a role in the distribution of worldwide investment flows, which might lead to the concentration of foreign direct investment by a single triad member in a given host country. These include cultural, historical, commercial and political links between home and host country. Also relevent is the competitiveness of firms from the home country, especially in regard to their experience in investing abroad and, in particular, to their access to market information for a wide range of possible host countries (as opposed to a limited set of nearby locations). Specifically, at the early stage of the home country's outward investment development path, firms tend to be small or medium-sized enterprises which lack the necessary resources and information to behave as global investors. Such firms may limit their initial overseas investments to nearby countries and to those with historical, political and commercial ties with their home country, even if superior locational advantages exist elsewhere.

55. The formation of a regional free-trade area with one of the triad members at its core could, hypothetically, also lead to a pattern in which foreign direct investment from the triad member would predominate in other countries within its free-trade area. This might occur if the opening up of the regional market to free trade led to increased intra-regional foreign direct investment, while at the same time transnational corporations from outside the region faced constraints to investing in the region.

56. Finally, since foreign direct investment is interlinked with trade, technology and financial flows (see sect. III), the patterns of these flows are also likely to influence the pattern of investment. In addition, the patterns of development assistance are likely to have an influence, especially as far as developing countries are concerned and, in the future, perhaps Central and Eastern European countries as well. In relation to the other members of the triad, the United States declined in importance as an aid donor in the 1980s; but the countries where

the United States is the primary donor are in Latin America. Japan has grown in importance as a donor, especially in Asia. The European Community is an important donor to developing countries in all major regions. Though the determinants of development assistance are not identical with those of foreign investment, the granting of aid has, in some instances, been linked to trade and foreign-direct-investment relationships. 25/

57. If these factors play an important role in the locational decisions of foreign investors, then an asymmetrical pattern might emerge in which foreign direct investment in a given host country or region is centred on a single home country. Such a pattern is indeed evident in the data presented in table 4 and the question arises as to which of the factors described above can explain the emergence of regional investment clusters. Colonial and, in some cases, political relationships appear to explain some of the linkages. But in others the key explanatory variables appear to be the globalization strategies of transnational corporations coupled with a trend towards the formation of regional trading blocs around each triad member. Thus, the interaction of several variables - the emergence of EC and Japan as key triad members, the opening up of Eastern Europe to foreign direct investment, the efforts made by transnational corporations to attain a global market share, and regional integration efforts at the policy level - appears to be leading to a pattern in which geographical and policy linkages to the home country, in addition to the locational advantages of host countries, are emerging as the key determinants of the global distribution of foreign direct investment.

III. INTERLINKAGES AND POLICY IMPLICATIONS

A. Interlinkages

58. The global pattern of foreign-direct-investment stocks and flows, along with the global patterns of trade, technology transfer and financial flows, is one of the most significant structural characteristics of the international economy. All four dimensions are interlinked to a significant extent through the activities of the transnational corporation:

> Much of world trade - world exports reached $3.8 trillion in 1989 - is undertaken by transnational corporations or propelled by foreign direct investment. Transnational corporations are responsible for a substantial share of world exports and imports; in the case of the United States, for example, at least 80 per cent of the country's trade was undertaken by transnational corporations in 1988. If only trade related to foreign direct investment is considered, the role of transnational corporations is still quite important. To use again the example of the United States: in 1988, the foreign affiliates of United States-based transnational corporations exported $87 billion in goods and services to the United States, accounting for about 19 per cent of all United States imports. The United States-based affiliates of foreign transnational corporations accounted for an additional 34 per cent of imports, implying that 53 per cent of United States imports passed through the affiliates of transnational corporations. 26/ In the case of Japan, foreign-direct-investment-related imports of manufactured goods from Asia have been growing, though overall the volumes involved are still relatively low.

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However, in some industries (such as general machinery, electrical machinery, transportation and precision equipment), about three quarters of Japanese imports from Asia in 1986 were shipped by Japanese affiliates. 27/ Transnational corporations are also involved in trade between their host country production locations and third-country markets. In 1988, third-country exports by foreign affiliates of United States-based transnational corporations were almost 70 per cent as large as all exports from the United States; the intra-firm portion of these third-country exports rose, from 44 per cent in 1985 to more than 50 per cent in 1987 and 1988. 28/ Furthermore, transnational corporations have helped stimulate exports from developing countries, either through their affiliates or through links with national companies. In the case of newly industrializing countries in Latin America and Asia, transnational corporations from Japan, Sweden and the United States helped stimulate exports in manufacturing industries. 29/ Several Asian developing countries have become major exporters, in part by drawing upon the technology, organizational skills and marketing networks of transnational corporations from developed market economies to produce components, and have become original equipment manufacturers and exporters of their own branded products in developed country markets.

Transnational corporations also play a major role in the international transfer of technology. In so far as such transfers take place through trade in capital goods, transnational corporations contribute to the process through their participation in trade. Moreover, as of the mid-1980s, some 80 per cent to 90 per cent of technology payments by developing countries to Germany and the United States took the form of payments from affiliates to their parent companies, that is, they were directly associated with foreign direct investment. 30/

As regards the area of finance, transnational banks are the principal sources of private international financial flows. But foreign-direct-investment flows in and by themselves also represent a significant share of international financial flows. In the case of the developing countries, for example, such flows accounted for 75 per cent of total long-term flows from private sources (excluding private non-guaranteed credit) to those countries during the period 1987-1989. 31/

Transnational corporations are therefore central institutions in the international economy for developed and developing countries alike.

59. The dynamism of foreign direct investment can best be illustrated by comparisons with world exports and world output. After having recovered from the slow growth years of the early 1980s, foreign-direct-investment flows grew by over 350 per cent between 1983 and 1989 (for an average annual rate of growth of 29 per cent), in contrast to world exports which grew (from a much larger base) by about 73 per cent over the same period (for an average annual rate of growth of 9 per cent) (see figure IV and table 5). Furthermore, foreign direct investment has grown more than three times as fast as world output during the period 1983-1989 (see table 5). This suggests that foreign direct investment is associated with an increasing share of world output. This raises the possibility that foreign direct investment is increasingly assuming the role of a principal engine of growth.

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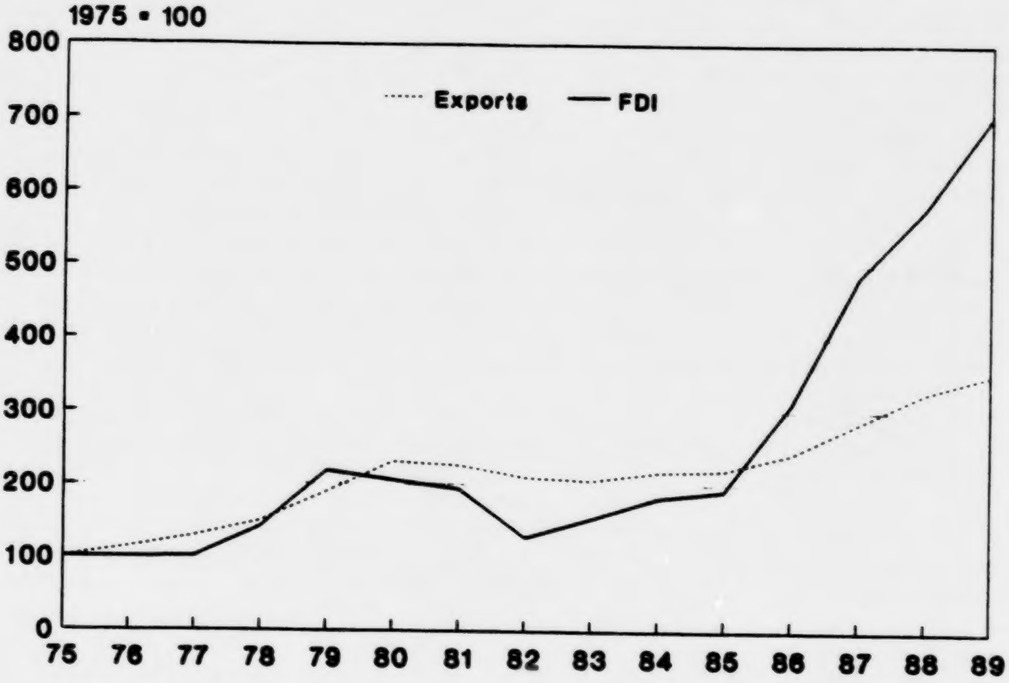
Figure IV. Index of current value of exports and foreign-direct-investment outflows, 1975-1989



Sources: Estimates made by the United Nations Centre on Transnational Corporations, based on Handbook on Foreign Direct Investment (to be issued as a United Nations publication), International Monetary Fund balance-of-payments tape, retrieved on 10 January 1991, and United Nations, Monthly Bulletin of Statistics, October 1984 and October 1990.

Table 5. Growth in current value of world foreign-direct-investment outflows, exports and gross domestic product, 1983-1989

(Average annual percentage change)

	1983-1989
World foreign-direct-investment outflows	28.9
World exports	9.4
World gross domestic product	7.8

Sources: Estimates made by the United Nations Centre on Transnational Corporations, based on Handbook on Foreign Direct Investment (to be issued as a United Nations publication), International Monetary Fund, Direction of Trade Statistics, 1990 (Washington, D.C., 1990), National Accounts Statistics: Analysis of Main Aggregates, 1987 (United Nations publication, Sales. No. E.90.XVII.8) and World Economic Survey, 1990 (United Nations publication, Sales No. E.90.II.C.1).

B. The need for a multilateral framework for governance

60. One implication of the foregoing analysis is that the central and growing importance of foreign direct investment raises anew and reinforces the urgency of a multilateral framework for foreign direct investment and the broader issue of governance in a world economy in which investment, trade, technology and financial flows are closely intertwined. Over the past decade, a growing number of international norms has produced a body of international soft law on transnational corporations; it is, however, limited in scope and does not adequately match the globalization of business activity. In an era of globalization, it is increasingly difficult to distinguish between national and international issues of governance. The capacity of Governments to manage their economies and achieve national objectives in areas ranging from fiscal policy to environmental control is being strained by the growing importance of transnational corporations in the international economy. Many issues related to corporate responsibility cannot be resolved satisfactorily in the context of a single national legal regime. Even among developed countries, the need for policy coordination is being felt, for example, in the area of transfer pricing. Competition among countries for more foreign direct investment, if free from any rules, may lead to a "beggar-thy-neighbour" policy and detract from the bargaining power of Governments *vis-à-vis* transnational corporations. Therefore, the effective and stable governance of international economic relations requires not only the unleashing of market forces and private enterprise, but also effective international instruments to deal with the broad range of issues related to the globalization of business activity - problems that are beyond the capacity of national regimes of governance.

61. The crucial importance of a multilateral framework is reinforced by the distribution of worldwide foreign direct investment. Since the rate of growth of foreign direct investment within the triad has outpaced that of the rest of the world, intra-triad foreign direct investment stock has increased from one third in 1980 to two fifths in 1989. Moreover, the triad members dominate foreign direct investment not only within triad, but in most other countries as well. This pattern has been brought about by the strategies of transnational corporations under which they appear to be assigning great importance to their presence in each member of the triad and to building regionally integrated core networks of affiliates clustered around their home countries. If this pattern persists, the possibility arises that foreign-direct-investment regimes will be increasingly determined by either bilateral negotiations among triad members and/or regional negotiations with one of the triad members. In the absence of a multilateral framework formulated with the participation of all members of the international community, a large number of countries run the risk of not having an effective voice in the determination of the foreign-direct-investment regime governing international economic relations.

C. Policy implications for improving foreign-direct-investment flows to developing countries

62. Within a broader multilateral context, special attention needs to be given to developing countries. Despite an increase in the absolute volume of foreign-direct-investment inflows to developing countries, the decline of their share in worldwide flows has continued in the late 1980s. Considering the pivotal role that foreign direct investment plays in economic development - not only in its own right, but also because of its close interlinkages with trade, technology and financial flows - there is a need to reverse the marginalization of developing countries and the resultant inequity in the international division of labour. This, in turn, raises the question to what extent can co-ordinated public policies by host countries, home countries and international institutions play a role.

63. In this context, it may be recalled that, at the same time as an increasing share of worldwide inward foreign direct investment is being concentrated in the triad, the sources of such investment are diversifying somewhat. As a result, developing countries must compete for a smaller share of inward investment from a growing array of sources. Within the triad, EC has increased its role as a home country and Japan has emerged as a significant source of outward investment, while the United States, compared with the other triad members, has declined markedly as a home country. If geographical location and regional economic integration are indeed significant determinants of the location of foreign direct investment, then those developing countries which lack such attributes risk becoming marginalized in the world economy. Furthermore, if the corporate strategy to become "regional insiders" in each leg of the triad becomes widespread, then many developing countries - as "outsiders" - may become even more peripheral, serving primarily as locations to sustain the competitive position of transnational corporations in the triad.

64. The task of policy-making in foreign direct investment in a world characterized by a triad will become increasingly complex for developing countries. In particular, the margin for effective policy-making utilizing traditional liberalization and incentive instruments is narrowing, 32/ though the scope for further improvement in the foreign-direct-investment framework by all developing countries has not been exhausted. This is because the scope for further liberalization and additional incentives diminishes as more and more of such measures are implemented; in addition, the effectiveness of such measures in attracting investment becomes more limited when virtually all countries have adopted them. In this light, it may be appropriate for developing countries to review their investment incentives and to structure them on the basis of a co-ordinated and realistic appraisal of their effectiveness.

65. At the same time, developing countries must recognize the new opportunities that are presenting themselves. They stem from the emergence of a triad in outward investment, as opposed to the domination of the United States as a home country 10 years ago; the growing number of home countries outside the triad, particularly among the newly industrialized countries; and the globalization strategies of transnational corporations from the triad, implying a continual search for new markets and production locations. But the creation of an attractive foreign-direct-investment regime alone, although necessary, is not sufficient to enable a country to take advantage of these opportunities. Additionally, measures are needed to improve domestic economic performance in general, and in particular to increase demand growth, and to improve infrastructure and human resources. Thus, measures to attract foreign investment will increasingly have to encompass policies beyond traditional regulatory and promotional instruments. Incentives provided on a multi-country level are also likely to prove more effective - particularly if the pattern of regional investment clusters described above and the strategies of transnational corporations to form regional core networks of affiliates, prove to be important developments in the 1990s.

66. Given the increasing share of global foreign direct investment directed towards the triad and the additional competition for foreign direct investment from Central and Eastern Europe, policy makers in developing countries should make efforts to diversify sources of inward investment. Such sources might include non-triad developed countries, emerging home countries among the newly industrialized countries, as well as small and medium-sized companies from both developed and developing countries.

67. While increasing investment flows is important, policy-making should not be singularly focused on the quantitative aspect. Developing host countries would be well advised to undertake systematic assessments of the foreign direct investment they receive, where it can make a significant qualitative contribution and explore ways and means to enhance this contribution.

68. The emergence of regional networks of affiliates with a triad member at the core of the networks appears to be accompanied by a gradual rise in the level of value-added being generated by developing-country affiliates in the networks. Intra-firm trade within these networks has been instrumental in promoting exports from host countries, particularly those which are incorporated into the networks of

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Japanese transnational corporations. These networks can also strengthen regional integration among developing and developed countries and often serve to lay the groundwork for successful initiatives in the policy sphere. In so far as foreign direct investment is driven by regional core network strategies of transnational corporations, regional integration schemes which do not include a triad member do not seem to have succeeded in accelerating foreign-direct-investment inflows. 33/ Hence triad members as well as other developed countries should assist developing countries in structuring regional integration arrangements in a manner that can boost investment inflows, including inflows from non-triad home countries.

69. Home countries could also assist by strengthening incentives to their transnational corporations for investment in developing countries. These incentives can take the forms of providing guarantees, risk insurance, preferential tax treatment of profits and dividends earned in developing countries, financial support for market investigations and feasibility studies and preferential market access to exports from developing countries. Many developed countries already have some schemes in these areas. 34/ What is required is a fresh examination of the existing measures and the determination to improve and supplement them to increase their effectiveness.

70. There is also a role for multilateral institutions. They can contribute towards increasing the locational advantages of developing countries by providing financial and technical assistance in such areas as improvement of infrastructure, the development of human resources and the design of promotional services. Perhaps more important, they can help developing countries in improving the quality of foreign direct investment and increasing the gains therefrom through technical assistance in a variety of areas. A number of multilateral organizations - particularly organizations of the United Nations system including the World Bank - already have programmes in these areas. Such programmes need to be further supported and augmented.

71. The importance of foreign direct investment as an engine of economic development, not merely in its own right, but also because of its close linkages with trade, technology transfer and financial flows, is by now well established. With that perspective in mind, the international community may wish to consider how to achieve a consensus on ways and means of attracting a greater flow of foreign direct investment to developing countries and to improve its qualitative content. Since the scope for action by individual host countries has become rather limited, the need for co-ordinated multilateral action by all concerned - host countries, home countries and international institutions - is all the more important.

Notes

1/ The concept of a triad in the world economy has become widespread in discussions of international corporate strategy and in descriptions of patterns of economic growth and world trade. See, for instance, Kenichie Ohmae, "The Triad World view", Journal of Business Strategy, No. 7 (spring 1987), pp. 8-19; and Sylvia Ostry, "The implications of developing trends in trade policy", Business Economics, January 1990, pp. 23-27.

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Notes (continued)

2/ Trade and Development Report, 1989 (United Nations publication, Sales No. E.89.II.D.14), pp. 71-72; and GATT, International Trade 89-90, vol. I (Geneva, 1990).

3/ Trade and Development Report, 1990 (United Nations publication, Sales No. E.90.II.D.6), pp. 91-95.

4/ Excluded tax havens are Bahamas, Barbados, Bermuda, Cayman Islands, Netherlands Antilles, Panama.

5/ In making these estimates, the United Nations Centre on Transnational Corporations used data from 96 capital-importing developing countries. Net resource transfers are defined as inflows of foreign direct investment (including reinvested earnings) minus remittances on account of such investment (e.g., profits, royalties and technology payments). It should be noted that inflows and outflows are related only over time in that outflows represent earnings realized on earlier inflows.

6/ Beginning-year figure from United Nations Economic Commission for Europe, East-West Joint Ventures News, No. 5 (July 1990), p. 11. End-year figure estimated by the United Nations Centre on Transnational Corporations, based on national sources.

7/ Keith A. Rosten, "Soviet joint ventures riding on troubled waters", The Wall Street Journal, 7 May 1990.

8/ Results of a survey conducted by DRT International, as reported in Business Eastern Europe, 8 October 1990.

9/ In 1980, EC accounted for the dominant share of foreign-direct-investment stock in France; by 1987, EC was dominant in France, Belgium, Italy, Portugal and Spain and was the single largest foreign investor in the Netherlands. In terms of inward flows, EC is the dominant investor in Germany and the Netherlands and holds an equal share with the United States in the United Kingdom.

10/ KPMG, Dealwatch (3rd quarter, 1990).

11/ National Accounts Statistics: Analysis of Main Aggregates, 1987 (United Nations publication, Sales No. E.90.XVII.8).

12/ "Nice view from up here", The Economist, 24 November 1990; and "US exporters that aren't American", Business Week, 29 February 1988.

13/ United States Department of Commerce, Bureau of Economic Analysis, U.S. Direct Investment Abroad: 1982 Benchmark Survey Data (Washington, D.C., 1985).

14/ Ministry of Finance of the Government of Japan.

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Notes (continued)

15/ Figures are for 1986. Industrial Bank of Japan, *Japanese Finance and Industry, Quarterly Survey*, No. 80 (fourth quarter, 1989).

16/ Industrial Bank of Japan, *Japanese Finance and Industry*, ...

17/ Raymond J. Mataloni, "U.S. multinational companies: operations in 1988", *Survey of Current Business*, No. 10 (June 1990).

18/ Industrial Bank of Japan, *Japanese Finance and Industry*, ...

19/ "Japan in East Asia: a boom pays off" *International Herald Tribune*, 30 May 1990.

20/ Rob Steven, "Japan's MNCs: the new power in Southeast Asia", *Multinational Monitor*, November 1989.

21/ "Thai economy booming, thanks to the Japanese", *The New York Times*, 10 May 1990.

22/ Ministry of International Trade and Industry (MITI), *Daisankai Kaigai Jigyo Katsudo Kihon Dhosan Kaigai Toshi Tokei Soran* (The third basic survey on business activities abroad: statistical compilation on investment abroad) (Tokyo, Keibun Shuppan, May 1989).

23/ By the end of April 1990 for the USSR.

24/ "Hong Kong: Asia its oyster", *The Economist*, 8 December 1990.

25/ Bernard Wysocki Jr., "Japan plots development of other economies in Asia through aid, investment programs", *Asian Wall Street Journal*, 27 August 1990; Juichi Inada, "Japan's aid diplomacy: economic, political or strategic?", *Millennium*, No. 18 (winter 1989), pp. 399-414.

26/ Raymond J. Mataloni, Jr., "U.S. multinational companies: operations in 1988", *Survey of Current Business*, No. 10 (June 1990), table 5; Ned G. Howenstine, "U.S. affiliates of foreign companies: operations in 1988", *Survey of Current Business*, No. 10 (July 1990), table 9.

27/ *Trade and Development Report, 1990* ..., p. 95.

28/ Mataloni, loc. cit., table 12; Obie G. Wichard, "U.S. multinational companies: operations in 1987", *Survey of Current Business*, No. 69 (June 1989), table 12.

29/ *Transnational Corporations and Manufacturing Exports from Developing Countries* (United Nations publication, Sales No. E.90.II.A.21).

30/ *Transnational Corporations in World Development: Trends and Prospects* (United Nations publication, Sales No. E.88.II.A.7), table XI.1.

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Notes (continued)

31/ Estimate made by the United Nations Centre on Transnational Corporations for 96 capital-importing developing countries, based on World Bank World Debt Tables tape and International Monetary Fund balance-of-payments tape.

32/ For an elaboration of this point, see the report of the Secretary-General on the determinants of foreign direct investment and their policy implications (E/C.10/1991/7).

33/ See Regional Economic Integration and Transnational Corporations in the 1990s: Europe 1992, North America, and Developing Countries (United Nations publication, Sales No. E.90.II.A.14), chap. IV.

34/ Foreign Direct Investment, Debt and Home Country Policies (United Nations publication, Sales No. E.90.II.A.16), pp. 26-36.

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TRANSNATIONAL CORPORATIONS AND ISSUES RELATING TO THE ENVIRONMENT, INCLUDING THE CONTRIBUTION OF THE COMMISSION AND THE UNITED NATIONS CENTRE ON TRANSNATIONAL CORPORATIONS TO THE WORK OF THE PREPARATORY COMMITTEE FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

Contribution of the Commission and the United Nations Centre on Transnational Corporations to the work of the Preparatory Committee for the United Nations Conference on Environment and Development

Report of the Secretary-General

SUMMARY

The present report is an interim version of a comprehensive and analytical report on possible measures that could encourage and mobilize transnational corporations to protect and enhance the environment while contributing to development. The report identifies five main themes on which the Commission on Transnational Corporations could make recommendations to the Preparatory Committee for the United Nations Conference on Environment and Development, namely: (a) internationally agreed standards and instruments; (b) transfer of environmentally sound technologies to developing countries on favourable terms; (c) international environmental management; (d) prevention of environmental deterioration; and (e) additional supportive measures.

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* E/C.10/1991/1.

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INTRODUCTION

1. The Economic and Social Council, in its resolution 1991/71, requested a comprehensive and analytical report to serve as the basis for a "significant and action-oriented contribution" from the Commission on Transnational Corporations to the preparatory work of the 1992 United Nations Conference on Environment and Development.

2. The Conference is likely to demonstrate the scope and breadth of the global commitment to integrate environmental considerations in economic efforts to achieve sustainable development. It is a continuation of an international process that began in Stockholm in 1972, leading in 1986 to the General Assembly establishing the World Commission on Environment and Development to formulate a global agenda for environment and development. As acknowledged by the World Commission:

> "Sustainable development is ... a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs. We do not pretend that the process is easy or straight forward. Painful choices have to be made." 1/

3. The Commission on Transnational Corporations could suggest including in the final declaration of the Conference a section on general policy obligations of transnational corporations that would reflect the emerging consensus about the impact of transnational corporation practices and the role they can play in support of sustainable development. The Commission could also make recommendations, regarding the activities and responsibilities of transnational corporations, for inclusion in the proposed work plan/agenda for international, national and local environment and development efforts for the beginning of the twenty-first century. The Conference may also be the occasion for the signing of new global environment agreements on climate change, biodiversity and biotechnology. Since the activities of transnational corporations have a major impact on these issues, 2/ the Commission could suggest recommendations that relate, for example, to the role of transnational corporations in meeting reduction targets for emissions, new investments in non-greenhouse gas producing energy sources, transfer of greenhouse gas reducing technologies and investments aimed at preserving genetic materials.

4. Industry, including transnational corporations, is already evolving environmental policies as a result of both external influences and internal corporate demands. Firms are reacting to the requirements of new national legislation and regulations, the adoption of pending and new international agreements, heightened public expectations of environmental stewardship and decisions requiring expenditures for prior environmental damage. At the same time, transnational corporations are discovering additional investment opportunities in the environment area, by integrating resource and energy conservation in their activities, by recognizing the economic benefits of consumer goodwill, by being ahead of the regulatory process and by developing an environmentally oriented business culture. This trend is less evident in the activities of transnational corporations in developing countries.

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A. Environmental importance of transnational corporations

5. While all firms affect the environment and development, transnational corporations in particular play significant roles in the sectors that directly affect the global environment. This critical and central role for the future of the global environment and for sustainable development is emphasized by the fact that transnational corporations are:

Key users of raw materials and the global commons;

Key developers and producers of products and production processes that can be harmful to the environment;

Key economic actors and investors with global operations and global strategies, including activities that are pollution-creating and possibly hazardous;

Key actors in channelling and fostering consumers' tastes, patterns of production and consumption, and lifestyles;

Key actors in the science and technology leap taking place, with enormous research and development capability in practically all domains of critical importance for sustainable development world wide (e.g., energy, transport, agriculture, environmentally sound technologies, information);

Key players on the global economic scene, and therefore directly and indirectly influential regarding economic and social performance of developing countries, and thus affect their abilities to respond to the requirements of sustainable development.

6. The extent to which transnational corporations through investments and activities dominate sectors with significant environmental impact should be viewed in the context of these roles. With respect to climate change, for example, transnational corporations are involved in activities that generate more than half of the greenhouse gases emitted by the six industrial sectors with the greatest impact on global warming. These sectors together account for 80 per cent of the greenhouse gas problem. 3/

7. Ozone-depleting chloroflourocarbons (CFCs) were produced almost exclusively by large chemical corporations, most of which are transnational corporations. One company alone accounted for 25 per cent of world production. That company, E. I. Dupont de Nemours and Co., in response to the dramatic evidence in 1988 that ozone depletion had already occurred over inhabited latitudes, announced it would support a complete phase-out of CFCs. The fact that one company can implement a global phase-out policy affecting 25 per cent of world production of such environmentally threatening chemicals underscores the importance of identifying the major industrial sources of environmental degradation and involving transnational corporations in remedial and preventative action. Subsequently, AT&T, General Motors, Northern Telecom, Nissan and other transnational corporations announced enterprise-wide plans to phase out CFCs in advance of agreed timetables. 4/ It is likely that such announcements had a positive impact on the intergovernmental negotiations for phasing out ozone-depleting chemicals.

8. Company policies setting targets for reducing greenhouse gas emissions will be significant in the light of the fact that transnational corporations play a central role in the extraction, refining and marketing of fossil fuels. Although resource and production facilities are about equally controlled between state-owned enterprises and transnational corporations, the latter are dominant in the control of technologies, transport, financing and downstream operations. The degree to which the automotive industry and the oil production industry cooperate in the design and marketing of more fuel efficient and less polluting vehicles could significantly lessen pollution and enhance the quality of life. 5/

9. Industrial chemical production, including the production of highly toxic chemicals, is largely in the hands of transnational corporations. The 20 largest pesticide manufacturers account for approximately 94 per cent of the world agrochemical sales in 1990. 6/ The nitrogen fertilizer industry is similarly concentrated. Thus, what chemical companies do with respect to health and safety standards for workers and consumers, emergency preparedness, waste minimization and the safe disposal of toxic chemicals is crucial.

10. Transnational corporations are also active in natural resource exploitation, such as in mining and metals production. In the aluminium industry, for example, six transnational corporations control 63 per cent of the mine capacity, 66 per cent of the refining capacity and 54 per cent of the smelting capacity. 7/ In general, the production of metals is highly energy-intensive. World wide, the production of aluminium, copper and iron, together, account for over 7 per cent of total global commercial energy use. 8/ The conservation, energy efficiency, recycling and waste management policies of these industries could significantly affect global warming and natural resource conservation efforts.

11. Because of their organizational and management structure, transnational corporations should be able to implement changes in industrial policies and practices relating to key environmental and developmental concerns throughout the enterprise. The top management of transnational corporations can provide the necessary policy mandates and reinforcement mechanisms to allow for the development of coherent policies and a common strategy for implementation throughout the enterprise. A corporate environmental policy incorporating developmental concerns, coupled with the intra-firm ability to share knowledge, resources and responsibilities, provides transnational corporations with the opportunity to play a leadership role in implementing uniform standards and policies globally, even ahead of changes in national or international law.

12. In addition, transnational corporations have the financial flexibility to raise investment capital and can distribute environmental research and development costs throughout the enterprise. They can allocate more resources for technological adaptation, environmental assessments and safety analysis. Transnational corporations also affect development through licensing agreements, bank lending and the impact of their investment on host country economies which provides employment, influences consumer spending and market development and provides training and industrial infrastructures. The table below indicates some of the ways in which the activities of transnational corporations can affect the environment in developing countries.

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Ways in which the activities of transnational corporations can affect the environment in developing countries

Environment issues identified by the General Assembly in its resolution 44/228	Selected impacts being examined by the Centre's Benchmark Corporate Environmental Survey
Atmospheric protection	Does the company use CFCs or related products at their plant sites in developing countries? Does the company monitor its stacks for air emission components in developing countries?
Protection of freshwater resources	Are any of the company's plants located in the immediate vicinity of drinking water supplies in developing countries? Are any of the company's products particularly hazardous to drinking water supplies in developing countries?
Protection of oceans	Does the company release effluents into oceans or sea-water tributaries off developing countries?
Protection and management of land resources	Does the company hold land for safety zones in developing countries? Does the company have programmes for wetland and rain forest protection in developing countries?
Conversion of biological diversity	Does the company practise mono-cropping or clearcutting in developing countries? Is the company aware of any survey on biological species on its undeveloped land in developing countries?
Environmentally sound waste management of biotechnology	Does the company market any genetically engineered products in developing countries?
Environmentally sound waste management	Does the company have procedures for monitoring the disposal of hazardous waste generated in plants in developing countries?
Improvement of the urban and rural poor	Has the company made provisions for infrastructure, housing or services for its workforce in developing countries?
Protection of human health and control of toxic chemicals	Does the company have a toxic education programme for its workforce or for the surrounding communities in developing countries?

Source: United Nations Centre on Transnational Corporations, Benchmark Corporate Environmental Survey, (New York, 1990).

Note: The Centre is currently examining the development of transnational corporation policies; for further information, see report of the Secretary-General on transnational corporations and issues relating to the environment (E/C.10/1991/3/Add.1).

B. Specific responsibilities of transnational corporations

13. The international basis for addressing the specific responsibilities and contributions of transnational corporations has been evolving rapidly in recent years. In adopting the Environmental Perspective to the Year 2000 and Beyond, the General Assembly, at its forty-second session, noted that "transnational corporations should establish progressively in the host countries the skills and technological capabilities needed for environmentally sound management of industry, even in the absence of legislation on desirable environmental standards" (General Assembly resolution 42/186, annex, para. 47 (h)). At its forty-fourth session, the General Assembly, in section I of its resolution 44/228, stressed that large industrial enterprises, including transnational corporations, are frequently the repositories of scarce technical skills for the preservation and enhancement of the environment, that they conduct activities in sectors that have an impact on the environment and, to that extent, have specific responsibilities and that, in that context, efforts need to be encouraged and mobilized to protect and enhance the environment in all countries.

14. In addition, various international forums have addressed particular aspects of transnational corporation responsibility. For example, the draft code of conduct on transnational corporations addresses, inter alia, environmental information disclosure, restoration of environmental damage and testing practices for environmental safety. The Tripartite Declaration on Principles concerning Multinational Enterprises and Social Policy, adopted by the International Labour Organisation (ILO), addresses worker safety and health standards. The Organisation for Economic Co-operation and Development (OECD) is now completing policy guidelines that may address the responsibilities of multinational enterprises from OECD countries for accident prevention and emergency response in non-OECD industrial plant sites. While these are precedents, only the criteria for sustainable development management, a set of normative guidelines elaborated at the request of the Economic and Social Council, in its resolution 1989/25, thus far address explicitly the role of transnational corporation management in the area of environmental protection in the light of development.

15. Some transnational corporations and international trade associations have already begun to develop environmental management policies and programmes. Amoco, Beiersdorf Ag, Boise Cascade, Cargill, Caterpillar, BF Goodrich, Nobel Industries, Noranda Inc., Toyota and Volvo are among the transnational corporations that, in response to the Benchmark Corporate Environmental Survey, have indicated that they already have in place a company-wide environmental policy. The Chemical Manufacturers Association, as part of its continuing effort to improve the industry's responsible management of chemicals, has adopted a "responsible care" programme. 9/ The European Council of Chemical Manufacturers' Federations (CEFIC) has adopted Principles and Guidelines for the Safe Transfer of Technology, which "aim at ensuring that the degree of safety of new installations employing the transferred technology are of an internationally accepted level and equivalent to that achieved in the country of origin". 10/ The International Chamber of Commerce (ICC), in its brochure Sustainable Development, The Business Approach, states that "business needs to be ready for new approaches to economics. For relatively modest investments of time and money there is a chance to contribute to the process and

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ensure future success in this new framework [of sustainable development]". 11/ ICC is currently preparing a "business charter for sustainable development, principles for environmental management", which will be considered for adoption at the second World Industry Conference on Environment Management, to be held at Rotterdam in April 1991.

16. While these developments indicate a growing willingness on the part of some leading companies to contribute to sustainable development, there is a continuing need for Governments to formulate standards. Competitive self-interest, free-rider firms, the lack of a level playing field and the inability of trade associations to enforce voluntary standards on their membership, render exclusively voluntary efforts inadequate. Voluntary efforts can complement international standards but cannot replace them. Such issues as transboundary environmental effects, the impact of chemicals on international trade, international waste dumping, the transfer of environmentally sound technologies, and additional financial resources, might particularly lend themselves to intergovernmental measures.

17. The present report is divided into five sections reflecting the developmental objectives set for the 1992 United Nations Conference on Environment and Development. The Commission on Transnational Corporations could consider making recommendations on the preparatory process for the Conference in the following development-oriented areas:

(a) Internationally agreed standards and instruments. The Conference agenda calls for the further development of international environmental law and a supportive international economic environment for arriving at specific agreements and commitments on major global environmental issues and other strategies that would result in sustained and environmentally sound development in all countries (General Assembly resolution 44/228, sect. I, para. 15 (d), (g) and (i));

(b) Transfer of environmentally sound technologies to developing countries. The Conference agenda calls for the development and implementation of effective modalities for favourable access to, and transfer of, environmentally sound technologies to developing countries (General Assembly resolution 44/228, sect. I, para. 15 (m));

(c) International environmental management. The Conference agenda calls for the identification of strategies that incorporate environmental concerns into the economic and social development process, particularly examining the state of the environment, and clearly identifying and analysing the sources of environmental degradation and appropriate preventive and remedial actions (General Assembly resolution 44/228, sect. I, para. 15 (a), (b), (c), (n) and (o));

(d) Prevention of environmental deterioration. The Conference agenda calls for international strategies of technical cooperation to prevent further environmental deterioration and combat pollution, hazardous wastes and toxic chemicals, through the assessment and anticipation of environmental risks, accidents and emergencies, the analysis and monitoring of environmental problems, and through awareness-building (General Assembly resolution 44/228, sect. I, para. 15 (f), (n), (o), (p), (s) and (t));

(e) Additional supportive measures. The Conference agenda seeks to identify ways and means of providing new and additional financial resources, including the consideration of various funding mechanisms, which would expand expertise and technological capacity for environmental protection and environmentally sound development, particularly in developing countries (General Assembly resolution 44/228, sect. I, para. 15 (h) (j), (k), (l) and (t)).

I. INTERNATIONALLY AGREED STANDARDS AND INSTRUMENTS

18. There is a growing consensus that unilateral action by individual Governments will be ineffective in addressing a number of major global as well as local environmental issues. This international concern about environmental issues has been reflected in an increasing number of international policy declarations, resolutions, decisions, guidelines, codes of conduct and conventions on the environment. These internationally agreed upon standards and policies are creating a new body of international law and norms designed to cope more effectively with the interdependence of environment and development issues.

19. Some international guidelines addressing environmental issues are in the form of resolutions or other non-binding agreements. Although such non-legally binding instruments are not enforceable, they represent internationally endorsed minimum standards. Other agreements are in the form of conventions or treaties that impose clear obligations on the parties to those agreements. When these standards are embodied in implementing legislation at the national level - as they are expected to be - transnational corporations operating in those countries have a legal obligation to comply. Although transnational corporations operate internationally, they cannot become parties to agreements concluded by member States. However, it can be argued that when the activities of transnational corporations affect the environmental concerns addressed by the terms of environmental policy instruments, they have a responsibility to ensure that their activities conform to the spirit and intent of the provisions of those instruments, in the light of the fact that such instruments represent an international consensus on minimum standards of behaviour.

20. One way of dealing with the responsibilities of industry, large enterprises and/or transnational corporations is to address expressly the responsibilities and policies that should be followed in the instrument. These instruments could identify the responsibilities of the corporate sector for specific environmental protection practices. Within the scope of the current negotiations on climate change, biotechnology and biodiversity, for example, it would be possible to address the specific responsibilities of industrial firms and transnational corporations.

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A. International agreements addressing industry and transnational corporations

21. There are two recent international agreements that explicitly address the responsibilities of industry, including transnational corporations: the International Code of Conduct on the Distribution and Use of Pesticides, adopted by the Food and Agriculture Organization of the United Nations (FAO), 12/ and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (see UNEP/IG.80/3).

22. The FAO Code was designed to protect people from pesticide poisoning, which remains a significant health and environment problem, particularly in developing countries. Each section of the FAO Code distinguishes the particular responsibilities of Government and the particular responsibilities of the pesticides industry. The Code was drafted with the active participation of industry, non-governmental citizen organizations and Governments. The international pesticides industry has agreed, through its international agrochemical manufacturers association, to comply with the Code. 13/ As a result, some companies have issued reports with respect to their activities related to the Code, but most have not. While it is the intent of the Code that Governments enact pesticide control legislation, in the absence of legislation the Code is voluntary; therefore, public reporting and the resulting voluntary changes in practices are the only practical implementation mechanisms. Thus, independent monitoring of deviations from Code policies could increase the effectiveness of the voluntary Code and enhance its objective in preventing pesticide poisoning, particularly in those host countries without effective pesticide regulatory authorities.

23. The Basel Convention will enter into force upon ratification by 20 States. At that time, industry, as one of the "generators" of waste, will be legally bound in those States that have ratified the Convention. The aim of the Convention is to establish control measures that would lead to reductions in the generation of hazardous waste and to transboundary movements of such wastes. Such movements are permitted only when the receiving site is equally or more environmentally safe for transport and disposal of waste than in the country of waste generation. The receiving State must consent to receive each shipment of waste.

24. In accordance with the intent of the Convention, industry should reduce the amount of waste generated by its activities. Provisions in the Basel Convention require, *inter alia*, the environmentally sound on-site disposal of wastes in all countries that are parties to the Convention. If this is implemented, there should be little need for transnational corporations to engage in the transboundary movement of wastes from their operations. When such movements do occur, transnational corporations should ensure that the proper notification and permits have taken place and that the waste facility meets the standards required by the Convention.

25. In addition to the Basel Convention, regional agreements are restricting the transboundary movements of hazardous wastes. The Fourth Lomé Convention (which governs relations between the European Community and associated States in Africa, the Caribbean and the Pacific, signed on 15 December 1989, prohibits the export of

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hazardous waste from the countries members of the European Community to those developing countries. 14/ The Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Africa, adopted on 29 January 1991, would bind countries to take action to prohibit the import into Africa of all hazardous wastes from non-African countries. 15/ The Bamako Convention, like the Basel Convention, specifically addressed "generators" of hazardous wastes.

B. International agreements that imply responsibilities for transnational corporations

26. The Vienna Convention for the Protection of the Ozone Layer came into force on 22 September 1988 and the Montreal Protocol on Substances that Deplete the Ozone Layer on 1 January 1989. Subsequent amendments to the Montreal Protocol set the year 2000 as the target date for the phasing out of CFCs and halons and 2005 as the target date for the phasing out of carbon tetrachloride. As stated in paragraph 8 above, CFCs have been produced almost exclusively by large chemical transnational corporations. Transnational corporations are also heavily involved in the intermediate consumption of CFCs in refrigeration systems and automotive air-conditioning and as solvents in the electronics industry. While initially resistant to measures to regulate ozone-depleting chemicals, almost all the major user groups have announced joint research and development efforts on alternatives. Thus, corporations have shown that, in the face of impending international regulation, they can effectively develop technological alternatives. 16/

27. What transnational corporations do to support the goals and objectives of the Montreal Protocol is crucial. Despite the fact that transnational corporations might wish to reap short-term market advantage in countries that are not parties to the Protocol the participation of transnational corporations in the production, investment or licensing of CFC-containing products in such situations would undermine the rationale for the Protocol. Finally, transnational corporations could further the objectives of the Montreal Protocol by actively participating in the transfer of non-ozone-depleting technologies at affordable prices to developing countries.

28. The London Guidelines for the Exchange of Information on Chemicals in International Trade, adopted by the Governing Council of the United Nations Environment Programme (UNEP) in 1987, are aimed at helping Governments, particularly developing country Governments, avoid serious and costly health and environmental problems owing to ignorance of the risks associated with the use of chemicals, particularly those that have been banned or severely restricted in other States. 17/ The Guidelines call for the exchange of information on chemicals to protect against environmental and health hazards, notification of control actions by Governments and information disclosure, including packaging and labelling policies. By 1986, more than 500 chemicals had been banned or severely restricted in their countries of origin. The vast majority of those chemicals are manufactured and marketed by transnational corporations. 18/

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29. Transnational corporations could be expected to assist Governments in fulfilling their obligations under the London Guidelines by providing information to the designated national authorities in the host countries in which they operate. International shipments of banned or restricted chemicals, including the intra-firm transfer of such compounds, should not take place without implementation of the prior informed consent procedures of the London Guidelines and without a complete dossier on the latest scientific and regulatory data being made available to customers, particularly those in developing countries.

C. New international agreements affecting transnational corporations

30. In 1981, UNEP sponsored an expert group which recommended to the Governing Council a specific future agenda for the development of international environment law. 19/ An updated agenda may be expected to emerge from the United Nations Conference on Environment and Development, to be held in 1992. Some of the specific transnational corporation themes addressed in the present report might be appropriately considered for new binding international agreements. In addition, the agreements currently under negotiation could stipulate the specific responsibilities of large enterprises, particularly transnational corporations.

31. At the present time, an international code of conduct on safety in biotechnology is being prepared under the auspices of a working group consisting of representatives of the United Nations Industrial Development Organization (UNIDO), UNEP, the World Health Organization (WHO) and FAO. While biotechnological developments were initially the product of small specialized high-technology firms, the trend is now towards increased control of biotechnology and genetic engineering by transnational corporations. Moreover, the technologies that were transferred to developing countries were largely in the public domain, such as high-yielding crops. The increased privatization and commercialization appears to be raising issues concerning ownership rights, patent rights, farmers' rights, protection of genetic resources, and access and transfer. 20/

32. While enterprise-wide environment and health protection policies on biotechnology could and should be undertaken voluntarily at the present time, it is clear that it would be useful for the biotechnology code of conduct to address expressly the role of industry, including transnational corporations and to define their specific responsibilities in this area of growing importance. Code provisions relating to the activities of transnational corporations could address such concerns as:

(a) The extent to which genetically engineered products will replace natural products that developing countries depend upon for economic growth;

(b) The necessity of taking care that research and development efforts do not focus on the products and processes that would be detrimental to sustainable development efforts in developing countries;

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(c) The development of internationally agreed standards for the field-testing of genetically engineered organisms and plants for transboundary application;

(d) The implementation of equally high testing standards in developing countries as in industrialized countries, being mindful not to exploit for market advantage the fact that certain practices that are unacceptable may not be forbidden in all countries;

(e) The uniform disclosure of information to the appropriate host government authorities, to the concerned public and to the relevant international agency or organization, about genetically altered products and processes.

33. The forthcoming framework convention on climate change will be far more difficult to negotiate and implement than the Vienna Convention and the Montreal Protocol. Whereas CFC production is concentrated in a handful of companies and relates to a narrow range of industrial processes, the industrial activities that generate greenhouse gases touch almost every aspect of industrial society. As mentioned above, transnational corporations dominate the six major industrial sectors that contribute to greenhouse gas generation and climate change: fossil fuel production, transportation, electricity generation, energy-intensive metals production, inorganic nitrogen fertilizers and the CFC industry. 21/ If the agreements reached are to truly reduce greenhouse gases, then the activities of most of the major transnational corporations in the world would be affected.

34. It is likely that one result of an agreement on climate change will be the setting of targets for the reduction of greenhouse gas generating emissions. While these targets may be national targets, it is not clear at this time whether targets will also be set for specific industries or particular industrial processes. With the convention in force, transnational corporations can be reasonably expected to take steps to conform their practices to the spirit and requirements of the convention. This would mean, for example, that investment decisions should not thwart carbon dioxide reduction targets, and differences among States on how reduction targets are implemented should not be exploited for short-term market gains. For example, one Government might require reductions for a specific industrial sector, whereas another Government might not. These differences should not be used as the basis for moving production facilities or not implementing reduction practices. A commitment at the highest corporate level would be crucial for mandating an evaluation of the available strategies for reducing emissions and conserving energy, as well as for studying the potential impacts of global warming and the rising oceans on corporate activities, both necessities for informed policy development. In this way, forward-looking management will be able to identify future markets, new products and new investments to replace activities that will need to be phased out and/or to compensate for the costs associated with retooling production facilities, replacing greenhouse gas generating technologies, and developing alternative energy sources.

35. The framework convention on climate change could include general principles for large enterprises and transnational corporations, such as the obligation not to exploit differences among States on how reduction targets are implemented for short-term market gains, or it could state the stewardship responsibilities of

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transnational corporations in the light of their use of the global commons, the atmosphere. The convention could also include criteria for the reduction and stabilization of emissions across plants, enterprise-wide goals for phasing out greenhouse gas emitting technologies and responsibilities vis à vis intra-firm transfers of cleaner technologies. The agreement could identify industry-specific policies for international application for the major transnational corporation sectors that generate greenhouse gases, such as transportation, production of energy-intensive metals (aluminium, copper, iron etc.) and fossil fuel production.

36. Most international agreements on the environment have not yet included provisions on transboundary activities of large enterprises. In the long run, however, transnational corporations will benefit from international policies that provide a level playing field for their activities. Perhaps it should be seen that the price of doing business outside the reach of national boundaries is the agreement to abide by international policies for environmental protection and preservation. Regardless of the legal form of an international environmental instrument, once the policies, standards and requirements are accepted through intergovernmental negotiations by the majority of the countries of the world, transnational corporations should be expected to conduct their activities in ways that support the spirit and letter of international law and do not exploit differences that may arise from their uneven application.

II. TRANSFER OF ENVIRONMENTALLY SOUHD TECHNOLOGIES TO DEVELOPING COUNTRIES

37. In the pursuit of sustainable development, developing countries need both increased access to existing environmentally sound technologies to ameliorate current pollution problems and new environmentally sound technologies for use in future investments. Existing technologies include those readily available and even taken for granted in the developed world, such as the availability of unleaded gasoline, water purification systems, scrubbers and filters for factory smokestacks, and environmental monitoring equipment. Given the dissatisfaction with the current levels and types of technology transfer, new and innovative, even boldly unconventional and often voluntary acts of environmental responsibility, on the part of all actors involved, must be envisaged if progress in this area is to be obtained in the near term. It can be argued that environment and development stakes relating to technology transfer place an added moral duty on all actors that possess the power to implement effective solutions to act responsibly and quickly.

38. The transfer of environmentally sound technologies and information that enhance the ability of developing countries to process, and thus add value to, domestically produced commodities can significantly benefit the environment. By enabling those countries to earn more foreign exchange for a given volume of commodity produced or extracted, value-added processing reduces the economic pressures driving the non-sustainable exploitation of natural resources and agricultural lands. It can also result in a proportional reduction of any deleterious environmental impacts associated with the production or extraction process.

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39. The General Assembly, in its resolution 42/186, adopted the Environmental Perspective to the Year 2000 and Beyond, contained in the annex to that resolution. It expressed concern about technology-related issues in the sections on food and agriculture, energy, bio-technology, international economic relations and industry. The section on industry makes specific recommendations to support "the transfer of industrial technology and skills from developed to developing countries to arrest environmental degradation associated with industry [and to promote] access of the developing countries to information and data on environmentally benign technologies" (para. 47 (a) and (k)). It also recommended that the transfer of clean, low-waste and pollution control technologies be promoted through international cooperation and that the possibility of making such technologies available at concessional prices to the countries in need be explored (para. 68 (j)).

40. Two years later, at its forty-fourth session, the General Assembly emphasized the crucial role of favourable access to environmentally sound technologies by developing countries in the preparation for the United Nations Conference on Environment and Development (resolution 44/228, para. 15 (m)). Subsequently, the Preparatory Committee for the Conference requested a study that would, inter alia, elucidate the concept of environmentally sound technology and clarify the process by which technology is transferred, examine the obstacles, on both the exporting and importing sides, that impede the transfer of environmentally sound technology and further examine what new mechanisms are needed and their financial implications. 22/

41. To assist in these deliberations, the Centre is undertaking a research project that analyses the barriers to and possible structures that could be used to increase the flow of environmentally sound technologies to developing countries on mutually beneficial terms. The project studies a number of economic mechanisms that could help reduce the barriers to the transfer, use and further development of environmentally sound technologies. These mechanisms include those that generate new sources of global revenue, as well as those that utilize market mechanisms, trade and investment agreements, national regulatory systems, tax and tariff systems and development assistance. The specific mechanisms studied under the first group, for example, are tradable and leasable pollution permits, greenhouse or carbon taxes and offset agreements (see E/C.10/1991/3/Add.1. for additional details).

42. If the mechanism of pollution permits were implemented, they would provide incentives for Governments and firms to fulfil emission-reduction targets set in international environmental agreements. Under a system of internationally tradable or leasable pollution permits, countries that were below the recognized international standards could market future pollution rights to countries that exceeded international standards. As most industrialized countries would likely be in excess of an international standard, developing countries are seen as potential beneficiaries of an international pollution permit system. Transnational corporations with affiliates that operate in both developed and developing countries could be in a position to trade or lease permits on an intra-firm basis. Since the mechanism could conceivably generate a significant amount of revenue, it could directly benefit the transfer of environmentally sound technologies through

the allocation of these new revenues to finance the purchase of environmentally sound technology or cover the related costs of local research and training in the operation of an environmentally sound technology.

43. In this respect, the United Nations Conference on Environment and Development could consider, inter alia, at least three specific transnational corporation aspects of the technology transfer issue: (a) intra-company access to environmentally sound technologies, (b) intra-firm participation in the environmentally sound technology research and development projects and (c) access by developing country companies to environmentally sound technologies owned by transnational corporation affiliates in developing countries.

44. Since the majority of transnational corporations are based in developed countries where more elaborate environmental regulations have been in effect, their developed country operations have been correspondingly adapted to satisfy both environmental regulations and public expectations. The result is the design and application of environmentally sounder versions of technologies to conform to the higher standards in these markets. Although many of these technologies are end-of pipe solutions and do not fully address a long-term sustainable development imperative, they have improved environmental conditions in the developed countries.

45. As noted earlier, Governments have agreed in the General Assembly that transnational corporations ought to implement home country requirements and regulations in host country operations even when the host country lacks such regulations and standards. When, for example, transnational corporations are subject to severe restrictions on DDT, asbestos or benzidine dyes in their home-country, they could be expected to refrain from producing and using such products in other countries even when there could be considerable short-term gains to be made through the temporary comparative advantage that the lack of regulation creates. Safe, alternative technologies equivalent to those placed in service in the home country could be transferred. The difference in regulations and standards among countries has often come about because of the varying costs and benefits for different countries. In any case, the adoption of environmentally sound practices and technologies in all countries would ultimately be conducive to long-term business objectives.

46. Carrying out a corporate-wide intra-firm policy to promote the rapid growth of transfers of environmentally sound technologies between transnational corporation home-base companies and affiliates in developing countries necessitates new structures. A well-established information system on internally available technologies and a mechanism for effectively monitoring the use of those technologies should be minimum prerequisites for an enterprise-wide programme in this area. Another component of the information system could be used to coordinate the implementation of procedures for handling hazardous substances and production processes across national borders. These procedures could be initiated with the understanding that they would be adjusted to the social, ecological and political realities of host country markets.

47. The information system could also facilitate exchanges between home country units and their affiliates on issues that affiliate management considers may

require expensive environmental research and development and to transmit environmental health and safety information discovered in one part of the enterprise to other units and associated companies throughout the enterprise. For example, when a transnational corporation headquarters research station discovers an unexpected hazardous effect of a product or process, such as evidence of potential carcinogenicity, this information could be made available on a priority basis with appropriate recommendations and precautions to be taken throughout the company's global structure.

48. Transnational corporation affiliates could ensure the local mastery of technologies by providing education and training at all levels of the enterprise, and extend this training to its customers in host countries. Affiliates in developing countries should participate in research and development cooperation programmes, not only with other parts of the corporation, but also with local academic and research institutions. A transnational corporation affiliate, for example, could be instructed to commission a local university to perform a research and development task related to environmentally sound technology use rather than requesting the work from the home-based research centre.

III. INTERNATIONAL ENVIRONMENTAL MANAGEMENT

49. As the criteria for sustainable development management indicate, there is a range of new managerial choices for executives of transnational corporations as they integrate environmental and development concerns into their business culture and organizational system. To operate a sustainable development-oriented business plan effectively, transnational corporations have to articulate a clear corporate policy, maintain an institutional structure to carry out that policy and operate a sophisticated reporting system.

A. Corporate world-wide policy

50. Comprehensive environment and development policies need to apply throughout the world wherever the company has investments, licensees or partners. It is important to ensure that headquarters' policies in the working languages of the local enterprises are effectively conveyed to all operations, particularly if the local environmental regulations in the host country are weaker than in the headquarters country. Transnational corporations can play a significant role in improving general environmental conditions by requiring their business affiliates and contractors to adhere to the same standards they set for themselves. 23/ High company standards could lift environmental performance to the level of the best practice world wide.

51. The implementation of environmental policies of transnational corporations may require particular structures and mechanisms in order to be effective. These include an environment unit in the headquarters of the corporation, clear lines of accountability that lead directly from managers overseeing environmental performance to the appropriate corporate authority such as the office of chief executive officer or the board of directors, and a modification of corporate

culture to inculcate the idea of environmental accountability into the full workforce. A clearly identified locus for the central environmental function is important for maximum effectiveness and response capability. It can facilitate communication with relevant management officials and coordinate disclosure to competent government agencies and appropriate public institutions. The central unit can also be assigned to oversee a variety of functions in the supervision of environmental performance. Some of the mechanisms in use by the leading environmentally sensitive transnational corporations include the following:

(a) Pollution monitoring techniques;

(b) Environmental audit procedures;

(c) Environmental impact assessment procedures;

(d) Waste handling procedures;

(e) Safety audit procedures;

(f) Hazard assessment procedures;

(g) Accident prevention plans;

(h) Emergency response systems;

(i) Worker safety training programmes;

(j) Management safety training programme;

(k) Energy conservation standards;

(l) Internal green labelling;

(m) Environmental accounting;

(n) Workers' participation in setting up health, safety and environment committee;

(o) Community participation in emergency planning;

(p) Annual meeting between headquarters and local environment officials. 24/

B. Environment and development impact assessment

52. Effective international sustainable development management requires at the minimum that senior corporate managers and competent government officials are well informed about the prospective environment and development consequences of the activities of the firm. The need to assess in advance the likely environmental impacts of new large projects is generally required in industrialized

countries. 25/ The European Commission, for example, has directed that "Member States shall adopt all measures necessary to ensure that, before consent is given, projects likely to have significant effects on the environment by virtue of, inter alia, their nature, size or location are made subject to an assessment with regard to their effects". 26/ Although the form of disclosure may differ, other industrialized countries require environmental impact assessments for projects likely to seriously affect the environment.

53. Environmental impact assessments usually include the foreseeable impacts of a project on air and water quality, waste management and disposal, fish and wildlife habitat, health and safety issues and demands on local transportation systems, sewage systems and other infrastructure demands. While environmental impact assessments are common practice in industrialized countries, they remain uncommon in developing countries.

54. In developing countries, development criteria such as import of capital, transfer of technology, number and kinds of jobs created or lost, increased exports, development of infrastructure such as roads, ports and communications, impact upon local industry, and training and education of the work force have traditionally been used in assessing the validity of foreign investment. The World Commission on Environment and Development stated that "environmental objectives must be built into taxation, prior approval procedures for investment and technology choice, foreign trade incentives, and all components of development policy". 27/ The World Commission also argued that environmental impact assessments of new investments should be broadened to include sustainable development criteria. 28/

55. The task of developing an environment and development impact assessment is not an easy one. The history of developing environmental impact assessments, with all the different forms that they take to suit the requirements set out by various agencies in industrialized countries, points to the difficulties that will be encountered in creating this new model. The task of assessing environment and development impacts would be facilitated and made more effective by the use of a single comprehensive disclosure policy for transnational corporations, setting out in totality what information is required. In developing countries, where such disclosure practices are absent, the utility of uniform specifications for environment and development impact assessment is evident. 29/

56. The following criteria set out some of the topics that could, as a first step, be included in environment and development impact assessments:

(a) Whether the industrial activity contributes to the overall diversification and strength of the local economy;

(b) The extent to which the activity either preserves or threatens biodiversity;

(c) The extent to which the facility intends to use common public resources and how it will conserve such resources;

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(d) The possibilities for utilizing renewable resources rather than depleting non-renewable resources in the facility;

(e) Whether adequate technological risk assessments have been made, particularly for those products and processes that could have major effects on the social and natural environment;

(f) Whether the technologies used in the facility are compatible with the needs and skills of the local region;

(g) Whether the local government and local community have been included in accident preparedness planning;

(h) Whether an evaluation has been made regarding the acquisition of environmentally sound technologies from local manufacturers.

57. The adoption by corporations of environment and development impact assessments for new project sites would constitute a significant contribution to the goals of the United Nations Conference on Environment and Development such as protection of the atmosphere, freshwater and ocean resources, land, biodiversity, and human health and the working environment of the poor. Transnational corporations have often incorporated some developmental concerns in their investment decisions in developing countries. These development concerns have generally not addressed environmental and natural resource depletion questions. A start towards sustainability could be made if Governments began examining foreign investment projects on the basis of some of the criteria set out above.

C. State of environment and development reporting

58. Environmental reporting is an essential tool in determining the strategies for transforming existing operations into fully sustainable operations. Environment and development reporting is retrospective and evaluative as compared with environmental and development impact assessments that are prospective, generating information related to future projects. The techniques for environmental reporting are diverse and growing. These include environmental audits, environmental financial statements, natural resource accounting and systems mandating data disclosure reports on such subjects as emissions, waste and accidents.

59. The information gathered as part of the disclosure requirements of environment and development reporting should optimally be used both internally for management decision-making and externally so that the relevant public, such as Governments (national and local), the community at risk and workers, can use the information for their own policy planning and for cooperative efforts with transnational corporate management.

60. Many transnational corporations have been collecting environmental data and monitoring their own operations and impacts. But, without deeper commitment to gathering data related to sustainability goals (such as the amount of wasted natural resources or energy underutilized in a production process), companies will

not be in a position to set new goals and strategies to meet them (such as knowing where a new technology is needed to conserve energy and limit emissions).

61. A standardized environment and development report could assess the corporation's environmental performance and analyse and monitor current and potential environmental problems. It could include an assessment of company-wide progress towards sustainable economic activity, focusing on the impact of investment decisions, resource conservation and efficiency, waste minimization, education and training of the workforce, research and development, transfer of environmentally sound technologies and economic impact in host developing countries. 30/ The publication of an environment and development global report by transnational corporations would contribute to the objectives of the United Nations Conference on Environment and Development "to examine the state of the environment and changes that have occurred" and "to promote open and timely exchange of information on national environmental policies, situations and accidents" (General Assembly resolution 44/228, para. 15 (a) and (p)).

62. To prepare a standardized environment and development report, corporate executives need to use a method of environmental auditing to keep themselves accurately informed of the environmental consequences of their firm's activities. At the same time, corporations need a revamped environmentally sensitive accounting system to measure properly the financial consequences of their environmental practices.

63. An environmental audit is "a systematic examination of performance during the operational phase of industrial activity to ensure compliance with requirements, as distinct from an environmental impact assessment which takes place in the planning phase before an operation starts". 31/ The World Commission on Environment and Development sought explicit use of environmental audits for both home and host company operations:

> "The transnationals should also institute environmental and safety audits of their plants measured against standards at other subsidiaries, not just against those of other local companies, which may have less stringent requirements. These audits and their follow-up should be made available to governments and other interested parties." 32/

64. Environmental auditing has become a central feature of environmental management. There is an emerging consensus among industrialists, particularly in North America, Europe and Scandinavia, that the preparation of environmental audits is increasingly essential, because companies that fail to audit the environmental performance of their plants, processes and products on a regular basis will find that it almost inevitably deteriorates. 33/ Systematic and company-wide environmental audits now exist at perhaps a third of the Fortune 500 largest companies, including Allied Signal, 3M, DuPont, General Electric and Volvo. Management consultancy firms such as Arthur D. Little and Booz Allen, in the United States, and Aspinwall & Company Ltd and the Centre for Environmental Management and Planning, in the United Kingdom, have devised procedures for environmental audits which are being used by various transnational corporations. Nevertheless, it is still the case that in the majority of corporations, environmental audits are

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inadequate, or absent altogether. Moreover, special environmental auditing procedures may be needed in countries that lack extensive legal reporting requirements on environmental performance.

65. Company financial statements usually contain little or no information on annual environmental expenditures or on environmental liabilities. Only a few transnational corporations itemize their environmental expenditures as a percentage of their total investments. Others state it is impossible to determine the extent to which expenditures either benefit the environment or create liabilities. 34/ However, given the recent enormous costs of clean-up and liabilities for environmental damage, a financial assessment of environmental performance is arguably as important as the assessment of a corporation's overall financial health.

66. Governments and companies alike are trapped in national and corporate accounting systems that were developed when environmental issues were not an important consideration. It has now become clear that existing accounting systems and methods do not adequately disclose or measure the value of natural resources and environmental services. Common public resources that are not owned are degraded without any attention paid to the loss incurred. In the interest of short-term profits and in the absence of legal requirements, privately owned resources are optimally depleted according to market opportunities but not according to a policy that takes into account the preservation of global reserves.

67. In addition, some other environmental costs (present and future) are borne by society. If enterprises were to internalize these costs, their profit and loss situation could change significantly. There are currently no accepted methods whereby these external costs can be reflected in financial statements - even in the hypothetical case where an enterprise would agree to or would be forced to pay these external costs. The United Nations Centre on Transnational Corporations is in the process of designing prototype financial statements for corporations so that they can account for and report their income and profits on a "sustainable" basis. The main challenge is to develop an acceptable valuation method for quantifying the unrecorded costs of non-sustainable economic activity. This requires that asset and liability boundaries be redefined to include quantifying the extent of resource depletion and degradation due to an enterprise's activities.

IV. PREVENTION OF ENVIRONMENTAL DETERIORATION

68. Every production process, activity or product has potential impacts on the environment, health and safety. What varies is the degree to which the product or process can pose a risk or actually present a hazard to the environment and the health and safety of workers, surrounding communities or consumers. During the past 20 years or so, international technical standards and practices have evolved for risk assessment and methodologies for the minimization or mitigation of hazards and for the prevention of serious accidents and the minimization of their consequences. These standards are sometimes expressed in regional or international agreements, in national law, in the technical standards and practices developed by engineering and industry associations and in the policy positions promulgated by international organizations. For example, UNEP, FAO, UNIDO, and WHO have published technical safety guidelines and manuals.

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69. In 1977, the International Labour Organisation, in its Tripartite Declaration on Principles concerning Multinational Enterprises and Social Policy, stated that "multinational enterprises should maintain the highest standards of safety and health, in conformity with national requirements, bearing in mind their relevant experience within the enterprise as a whole, including any knowledge of special hazards". 35/

70. In 1987, the World Commission on Environment and Development stated that large industrial corporations, particularly transnational corporations, "should adopt the highest safety and health protection standards practicable and assume responsibility for safe plant and process design and for staff training". 36/

71. In 1989, the Ministers at an OECD Conference on Accidents Involving Hazardous Substances adopted a concluding statement articulating the principle that all parties concerned should promote a level of safety for hazardous installations in developing countries equivalent to that for similar installations in OECD countries. 37/

72. In most industrialized countries, enterprises must provide notification of risk in the construction and operation of facilities and must report the presence of toxic or volatile materials and the occurrence of spills, accidents and worker injuries. Some Governments require that this information be made available to the public. 38/ Most industrialized countries also require that potentially harmful products be approved before sold to the public, and approval requires notification of risks involved. Most developing countries in which transnational corporations operate, however, lack environmental laws and regulations as stringent as those in the industrialized countries. Even where the legal framework exists, implementation and enforcement is often ineffective because of the lack of resources for training, equipment and staff.

73. These regulatory schemes, coupled with technical support from industry associations, means that transnational corporations have access to advanced methodologies for assessment and notification of occupational health and safety risks associated with the use of hazardous products, processes or materials in facility operations, plant construction and raw material extraction. Since transnational corporations utilize these methodologies and procedures in industrialized countries, and obviously have the environmental scientific staff and technical skill, they should be able to extend this knowledge to all countries in which they operate and sell products. This means, among other things, the maintenance of consistent and complete environmental, health and safety information for all products and processes. There should be special warnings and labels, particularly in developing countries, for highly toxic or severely restricted products or processes, unless explicitly instructed otherwise by national laws or regulations.

74. A transnational corporation can establish technical requirements for equivalent levels of risk and safety for high-hazard products and processes that would be adhered to by the entire corporation throughout the enterprise. For example, there are certain processes and products, such as those involving explosives, asbestos of polychlorinated biphenyl (PCBs), that are extremely dangerous in any quantity and in any environment. A transnational corporation could have requirements pertaining to the use and handling of such products and

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processes when local legislation is not sufficient to maintain a uniform high standard throughout the enterprise. Whenever this is necessary, corporations should insist that contractors demonstrate the necessary technical competence and maintain equivalent high levels of performance and integrity for high-hazard products, processes and wastes.

75. Given the diverse conditions facing transnational corporations operating in different socio-cultural and physical environments, however, it might not be possible for them to adopt a completely uniform approach to the technical implementation of their environment, health and safety standards throughout the enterprise. For some activities, headquarters can issue instructions to local management that may need to be adapted to local conditions. Subsidiaries should inform headquarters of any modifications they have had to make to safety instructions that may have been necessitated by social factors, technical differences, location, environment and waste disposal requirements so that they achieve equivalent levels of health and safety.

76. Finally, transnational corporations can produce guidance documents to inform local managers about all aspects of health and safety risks involved in the enterprise's operations. These should include information that local managers can use to limit and bring under control the consequences of out-of-the-ordinary incidents.

77. Labelling standards should also apply in intra-firm exchanges of toxic substances that are used either in production processes or by agricultural workers. This is particularly important in developing countries where hazards to workers in chemical facilities or from agrochemicals is particularly problematic. The FAO Code of Conduct on the Distribution and Use of Pesticides provides a model that could be extended to all chemicals. It includes warnings in appropriate languages, the use of symbols and pictograms, clear identification and dating of each batch of chemicals and storage instructions.

78. Transnational corporations, as a result of increased regulation and industry initiative in industrialized countries, have knowledge of and expertise in procedures for assessment and notification of risk, emergency preparedness and overall safety standards. Some companies do apply equivalent environmental standards in all the countries in which they operate. By establishing an equivalent level of risk and safety standards transnational corporations can also further the development goal of the United Nations Conference on Environment and Development of strengthening the capacity of developing countries for identifying, analysing, monitoring, managing or preventing environmental problems.

V. ADDITIONAL SUPPORTIVE MEASURES

A. Innovative financing to promote sustainable development

79. It is generally accepted that most developing countries will not be able to self-finance a transition to environmentally sustainable development owing to burgeoning populations, fluctuating commodity prices, high debt service

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obligations, stagnant official development assistance and net capital outflows. Without a massive increase in external assistance, most projections paint a bleak picture of continuing economic stagnation, deepening poverty and accelerating environmental destruction in many parts of the developing world. The effects will be felt both locally and globally, the latter via global warming, loss of biological diversity and natural resource deterioration.

80. A variety of innovative proposals about revenue generation for sustainable development have emerged. 39/ The report of the World Commission on Environment and Development pinpointed "automatic" revenue sources such as monies derived from the use of the international commons and taxes on international trade. Numerous burden-sharing environmental tax, clearinghouse or levy schemes on a global level have been proposed, including a "planet protection fund" (proposed at the Ninth Summit of the Non-Aligned Movement), an "international fund for the atmosphere" (advanced by Norway), a "biodiversity fund" (envisaged as part of the proposed biodiversity convention), and a "global environmental trust fund" (financed by levies on greenhouse gases, suggested by the International Conservation Financing Project).

81. The Centre began examining the feasibility of a corporate fund for international environmental protection in developing countries at the request of the Economic and Social Council. The fund could attract, mobilize and direct capital resources to qualified projects or entities in developing countries in the following tripartite manner: (a) a fund for non-profit corporate contributions would consist of voluntary and in-kind corporate contributions and would be designed to make private sector resources available for projects in the developing world that meet sustainable development criteria; (b) a for-profit venture capital fund would support the growth and development of commercially viable environmental efforts in the developing world and augment the resources of the first fund; this fund could be organized and managed as a standard for-profit venture capital fund; (c) a for-profit mutual equity fund would reward and encourage corporate environmental responsibility of more established enterprises and provide financial resources for the operations of the non-profit window.

82. Along with tax and project financing, a variety of other resource transfer mechanisms might also be expanded. These could include, for example, increased availability of funding for purchase and conversion of discounted debt to support larger "debt-for-nature" programmes, along with broad-based debt restructuring or retirement schemes with strong environmental conservation or other sustainable development provisions. 40/ Alternatively, revenues from an international greenhouse gas tax could be used by a developing country to compensate patent holders of environmentally sound technologies needed by enterprises within the country, or revenue from a global carbon tax could be used to finance the conversion of a major industrial sector in a developing country to a higher energy-efficiency regime.

83. Most developing countries can neither afford nor be expected to make the transition to sustainable development unless they gain access to additional financial resources and technologies in which transnational corporations are chief repositories. Transnational corporate and bank support for, and participation in,

the kinds of resource generation and transfer schemes reviewed above can be argued on humanitarian, environmental and economic grounds. It is clear that the biological and natural resource base on which so many transnational industries depend is likely to diminish rapidly in quality and quantity unless the vicious circle of poverty-induced environmental degradation is checked in much of the world. Similarly, market and regulatory stability desired by most firms will be hard to achieve if massive social and political unrest is unleashed by economic stagnation and environmental impoverishment.

B. Contributions by transnational corporations to sustainable development

84. Sustainable development management will require that transnational corporations expand the criteria traditionally used for deciding where and what to invest in (beyond availability of natural resources, proximity to markets, tax incentives by Governments etc.) to include, for example, the extent to which the investment either depletes non-renewable resources or uses renewable resources. This should apply to industrialized countries as well as to developing countries. However, since developing countries are particularly dependent on their natural resource base, increased transnational corporate investment taking resource conservation into account is crucial for long-term economic growth.

85. Transnational corporations may also contribute to sustainable development by providing developing countries with environmentally sound investments that generate manufacturing exports and diversify the economies away from dependence on volatile commodity markets. These can especially assist developing country Governments by seeking, developing and cooperating in projects in the basic services industries such as health care, sanitation, primary education and mass transportation.

86. Transnational corporations have supported worthy social causes as a way of assisting the communities and of projecting a positive image to consumers and government officials in the countries where they operate. Their contributions have been either financial or in-kind, encompassing ethical investing, community work by employees, or public education training by staff members. For example, some companies have built plants in areas of high unemployment, or have used suppliers that help train and employ marginalized people. Recent awareness of the environmental problems facing the planet has also prompted corporations to take initiatives that help mitigate environmental problems such as the destruction of rain forests or the killing of dolphins.

87. Corporate in-kind environmental donation programmes are expanding in varying ways. Individual corporations donate their products to clean oil-spills or make corporate land available for nature conservation. The International Environment and Development Service of the World Environment Centre provides free or subsidized technical services (drawing on the resources of 45 transnational corporations) to enterprises in developing countries so as to enhance urban and industrial health, safety and pollution prevention. Were more corporations to make similar contributions, the level of expertise and skills to deal with environmental problems available to developing countries would significantly increase. However,

there is a great disparity in the level of environmental and social expenditures by individual firms. An agreed upon minimum level would provide an impetus for non-contributors to make an appropriate effort to support sustainable development in developing countries.

VI. CONCLUSION

88. The transformation of the international economy into one that is based on sustainable development will be a complex and challenging process. It will involve major changes by a wide range of actors: Governments, trade unions, farmers, industry and the general public, to mention a few. It will also involve extensive re-examination of the structure of key industrial sectors, such as energy, food production, financial accounting and mining sectors. Within the intergovernmental arena, also, new and different forms and approaches will need to be created. In the preparation for the 1992 United Nations Conference on Environment and Development, each section of the United Nations system has been asked to endeavour to make a contribution within its sphere of competence, while keeping in mind the interrelatedness required for sustainable development as a whole.

89. This places an unusual constraint on each intergovernmental body and secretariat in making its contribution to the Preparatory Committee for the Conference. By their nature, the separate specialized bodies need to concentrate on their authorized area of work. In the case of the contribution from the Commission on Transnational Corporations and the Centre, any research and policy recommendations will be focused on the transnational aspects of sustainable development. The international agenda for the 1990s and beyond may well focus on the need for global policies and instruments to channel and harness the enormous potential that transnational corporations possess in order to obtain the objectives of sustainable development, while seeking means to control and reduce any negative impacts contrary to those goals. While the core topics covered are specific to the structure of transnational corporations, some of the areas may have analogous aspects for nationally based industries and apply to those firms as well. It is clear that the effective implementation of sustainable development cannot be accomplished by transnational corporations alone. Even the most committed firms cannot operate sustainably unless, as a minimum, Governments have in place a policy framework conducive to sustainable economic and social development. It is within this context that this interim, comprehensive and analytical report has identified five developmental themes on the basis of which transnational corporations could take measures to promote sustainable development.

Notes

1/ World Commission on Environment and Development, Our Common Future (London, Oxford University Press, 1987), p. 9.

2/ See Climate Change and Transnational Corporations: Analysis and Trends (to be issued as a United Nations publication); and Transnational Corporations and the Transfer of New and Emerging Technologies to Developing Countries (United Nations publication, Sales No. E.90.II.A.20), pp. 64-100.

Notes (continued)

3/ See Climate Change and Transnational Corporations ..., pp. 7-8.

4/ See Sharon L. Roan, Ozone Crisis: The Fifteen-Year Evolution of Sudden Global Emergency (New York, Wiley, 1989), pp. 208-209.

5/ Thirteen transnational companies in the automotive industry supply 80 per cent of the total world market; Deborah Bleviss, The New Oil Crisis and Fuel Economy Technologies (New York, Quorum Books, 1988), p. 7.

6/ "Top twenty companies hold 94% of world market", AGROW (Richmond, Surrey, United Kingdom, PJB Publications Ltd., 1 June 1990), p. 1.

7/ See Climate Change and Transnational Corporations ..., p. 80.

8/ Transnational Corporations in the Bauxite/Aluminium Industry (United Nations publication, Sales No. E.81.II.A.S), p. 1.

9/ Chemical Manufacturers Association, "Responsible care: a public commitment, guiding principles" (Washington, D.C., April 1990).

10/ European Council of Chemical Manufacturers Federations, A Guide to Safe Warehousing for the European Chemical Industry (Brussels, 1987), para. 1.2.

11/ International Chamber of Commerce, Sustainable Development, The Business Approach, publication 210/330 (Paris, November 1989).

12/ See Report of the Conference of FAO, Twenty-third Session, Rome, 9-28 November 1985, resolution 10/85, annex.

13/ International Group of National Associations of Manufacturers of Agrochemical Products, "Implementing the FAO Code of Conduct: report on a survey to assess the progress being made by industry with the implementation of the International Code of Conduct on the Distribution and Use of Pesticides" (Brussels, September 1989).

14/ Fourth ACP-EEC Convention, signed at Lomé on 15 December 1989, Title 1, Environment, article 39.

15/ Organization of African Unity, Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes within Afria, adopted 29 January 1991, see article 1, "Definitions", and article 4, "General Obligations".

16/ See Climate Change and Transnational Corporations ..., p. 94.

17/ Official Records of the General Assembly, Forty-second Session, Supplement No. 25 (A/45/25 and Corr.1), decision 14/27.

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Notes (continued)

18/ See Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved By Governments (United Nations publication, Sales No. E.87.IV.1).

19/ United Nations Environment Programme, Environmental Law in the United Nations Environment Programme (Nairobi, 1990), p. 2.

20/ Transnational Corporations and the Transfer of New and Emerging Technologies to Developing Countries ..., pp. 64-100.

21/ Climate Change and Transnational Corporations ..., pp. 4-5.

22/ A/45/46, decision 1/8.

23/ International Chamber of Commerce, Sustainable Development ..., p. 7.

24/ United Nations Centre on Transnational Corporations, Benchmark Corporate Environmental Survey (New York, 1990).

25/ Transnational Corporations and Industrial Hazards Disclosure, (to be issued as a United Nations publication).

26/ Council of the European Communities, Directive 85/337/EC of 27 June 1985.

27/ Our Common Future ..., p. 64.

28/ Ibid., p. 86.

29/ Transnational Corporations and Industrial Hazards Disclosure ...

30/ The Centre has initiated a research project on the development of minimum standards for carrying out a public environmental performance report (see E/C.10/1991/3/Add.1); United Nations Development Programme International Conservation Financing Project, Natural Endowments: Financing Resource Conservation for Development (Washington, D.C., World Resources Institute, 1989); Linda Starke, Sign of Hope: Working Towards Our Common Future (Oxford, Oxford University Press, 1990), chap. 7; World Conservation Union, UNEP and World Wildlife Fund for Nature, Caring for the World: A Strategy for Sustainability, second draft (Gland, Switzerland, June 1990), William A. Delphos, Environment Money: The International Business Executive's Guide to Government Resources (Washington, D.C., Venture Publishing, 1990).

31/ International Chamber of Commerce, Environmental Auditing (Paris, 1989), p. 6.

32/ Our Common Future ..., p. 231.

Notes (continued)

33/ J. Elkington, The Environmental Audit: A Green Filter for Company Policies, Plants, Processes and Products (United Kingdom, World Wildlife Fund for Nature, 1990), p. 9.

34/ Efforts to design a standardized format for corporate environmental financial reporting are already under way in the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (see E/C.10/AC.3/1990/5 and E/C.10/AC.3/1991/5).

35/ International Labour Organisation, Tripartite Declaration on Principles concerning Multinational Enterprises and Social Policy, 1977, para. 37.

36/ Our Common Future ..., p. 231.

37/ Organisation for Economic Cooperation and Development, Ministerial Declaration on the Avoidance of Accidents Involving Hazardous Substances (Paris, 1989).

38/ Transnational Corporations and Industrial Hazards Disclosure ..., p. 51.

39/ For a review see Natural Endowments: Financing Resource Conservation for Development ...

40/ See Konrad von Moltke and Paul J. De Long, "Negotiating in the global arena: debt-for-nature swaps", Resolve, No. 22, (1990).

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TRANSNATIONAL CORPORATIONS AND ISSUES RELATING TO THE ENVIRONMENT, INCLUDING THE CONTRIBUTION OF THE COMMISSION AND THE UNITED NATIONS CENTRE ON TRANSNATIONAL CORPORATIONS TO THE WORK OF THE PREPARATORY COMMITTEE FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

Transnational corporations and issues relating to the environment

Report of the Secretary-General

Addendum

SUMMARY

The present addendum reports on the work of the Centre in the area of transnational corporations and environmental protection in home and host countries, particularly in developing countries. The addendum identifies five themes under which the Centre's ongoing work can be classified: (a) measures to mobilize transnational corporations to contribute to sustainable development; (b) environmentally sound technologies and products; (c) advisory assistance on environmental regulations in developing countries; (d) contribution to international environmental conventions and agreements; and (e) accounting and reporting standards for sustainable development. The addendum discusses ways in which the work of the Centre can further contribute to environmental protection in developing countries and the Centre's participation in the United Nations Conference on Environment and Development.

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* E/C.10/1991/1.

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INTRODUCTION

1. The Economic and Social Council, in its resolution 1989/25, requested the United Nations Centre on Transnational Corporations to expand its ongoing work in the area of transnational corporations and environmental protection. That request was based on resolutions on environment and development adopted by the General Assembly since 1987, the year in which Our Common Future, 1/ the report of the World Commission on Environment and Development, and Environmental Perspective to the Year 2000 and Beyond were issued. 2/ Both reports attributed a major role to industry, in general, and transnational corporations, in particular, in society's move towards sustainable development.

2. In June 1990, the Committee for Programme and Co-ordination, in its deliberations on the proposed medium-term plan for the period 1992-1997, was of the view that emphasis should continue to be placed on the Centre's programme on the impact and role of transnational corporations in the context of environment and development. 3/ The Economic and Social Council, at its second regular session of 1990, adopted resolution 1990/71, section II of which deals with transnational corporations and environmental protection in developing countries. The resolution focuses on two main areas of activities: the substantial preparations for the 1992 United Nations Conference on Environment and Development as they relate to transnational corporations, and the continuation of the work authorized under Council resolution 1989/25. As both areas of activities had programmatic and budgetary implications, a statement on programme budget implications in the amount of $361,200 was made available to the Council during its deliberations.

3. Owing to the fact that a decision on the budgetary implications of the resolution could not be taken until the Advisory Committee on Administrative and Budgetary Questions (ACABQ) met in November 1990, the Centre had to delay some of the programmatic activities until after the winter of 1990. With the supplemented appropriation of $180,000 authorized in December 1990, a number of the requested activities were carried out. Others had to be reprogrammed until the biennium 1992/93.

I. MEASURES TO MOBILIZE TRANSNATIONAL CORPORATIONS TO CONTRIBUTE TO SUSTAINABLE DEVELOPMENT

4. The Economic and Social Council, in its resolution 1990/71, requested the Centre to investigate measures that could encourage and mobilize transnational corporations to protect and enhance the environment in its relationship with development. The General Assembly, in its resolution 44/228, stressed the role of large industrial enterprises, including transnational corporations, because they conduct activities in sectors that have an impact on the environment. The Assembly also stressed the need for the United Nations Conference on Environment and Development to address environmental issues in the development context with the objective of identifying strategies for concerted action to deal with major environmental issues in the socio-economic development processes of all countries.

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5. In recent times, Governments, international organizations, environmental groups and industry itself have participated in a series of international meetings of which industry was called upon to phase out production and marketing practices that have a detrimental effect on the environment and perpetuate the current non-equitable pattern of development. The important role of transnational corporations with respect to sustainable development is, therefore, recognized by public and private entities alike.

6. The work of the Centre in this area has concentrated on encouraging transnational corporations to acknowledge their responsibility with regard to environmental protection and mobilizing them to act to enhance the environment while contributing to economic and social development. The Centre has sought to cooperate with other international organizations and bodies, in particular the United Nations Environment Programme (UNEP), the secretariat of the United Nations Conference on Environment and Development, the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Industrial Development Organization (UNIDO), and with non-governmental bodies.

A. Criteria for sustainable development management

7. The criteria for sustainable development management were developed by the Centre in response to the request by the Economic and Social Council in resolution 1989/25 to develop ways and means, including the elaboration of a set of criteria and operational principles, for strengthening the participation of transnational corporations in the efforts for environmental preservation and protection. The Council, in section II, paragraph 3, of resolution 1990/71 took note with appreciation of the criteria for sustainable development management. The criteria are the only attempt thus far to address directly the role of transnational corporations management in the area of environmental protection in the light of development.

8. The criteria have been presented at Globe 90, an international conference on business and the environment, held at Vancouver, Canada; the Economic Commission for Europe (ECE) regional conference on sustainable development, held at Bergen, Norway; the first session of the Preparatory Committee for the United Nations Conference on Environment and Development, held in Nairobi; a seminar on dialogue between corporations and the community, held in Washington, D.C.; a workshop on environmental education for business schools, held in Fontainebleau, France; a workshop on the responsibilities of transnational corporations in the export of hazardous technologies to Eastern Europe and developing countries, held in Luxembourg; and two environmental directorate working groups of the Organisation for Economic Co-operation and Development (OECD). Copies of the criteria were sent with the survey on corporate environmental management practices to about 1,000 transnational corporations. So far, over 5,000 copies of the criteria have been distributed.

9. As a result of these presentations and publicity, there have been numerous requests for the criteria by business people, environmental groups, universities and individuals. The criteria are available in English, French, Spanish, Russian,

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Chinese and Arabic, and have also been distributed to a number of international organizations. Positive replies have been received from UNEP, the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), the Economic and Social Commission for Asia and the Pacific (ESCAP), the Economic Commission for Africa (ECA), the United Nations Institute for Training and Research (UNITAR), the International Labour Organisation (ILO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

10. The criteria have received the endorsement of a number of persons prominent in the environment and development field. The Centre has prepared a new edition of the criteria together with these endorsements. The Centre is seeking extrabudgetary resources for tailoring the criteria into training material for corporate management programmes and for the creation of an environmental business ethics course. The training materials will be sent to a number of transnational corporations for evaluation. An outside evaluation team will visit the corporations to assess the usefulness of the material.

B. Survey of corporate environmental policies

11. In response to the Council's request to investigate other measures that could further mobilize transnational corporations to protect and enhance the environment in its relationship with development, the Centre prepared a survey of about 1,000 transnational corporations. The survey seeks information on the corporations' international environmental policies, programmes and procedures. Through the survey, the Centre seeks to identify the most innovative corporate environmental management practices that can contribute to environmentally sound development, particularly in developing countries. The results of the survey will be presented in two related reports: the numerical data will be analysed, where appropriate, for summary presentation; the qualitative data and supporting documents will be reviewed and extracts will be used to illustrate the most innovative international corporate environmental management systems currently in use by transnational corporations. The preliminary results of the survey will be presented to the Preparatory Committee for the United Nations Conference on Environment and Development at its third session. The Government of the Netherlands is providing extrabudgetary support for the survey.

C. Comprehensive and analytical assessment

12. In its resolution 1990/71, the Economic and Social Council requested the Executive Director of the Centre to prepare a comprehensive and analytical study, with a view to helping the Commission on Transnational Corporations make a significant and action-oriented contribution to the preparatory work of the Conference. The interim version of the report is designed to provide background analysis and research on precedents for an in-depth discussion of the specific responsibilities of transnational corporations and the measures that should be recommended in order to further mobilize and encourage them to protect and enhance the environment in relation to development. The study focuses on five main themes relating to the contribution of transnational corporations to sustainable

development, as derived from the development concerns expressed by the General Assembly in paragraph 15 of its resolution 44/228. The Commission on Transnational Corporations, as the focal point within the United Nations system for issues relating to transnational corporations, has the opportunity to recommend measures that will encourage and mobilize transnational corporations over the long term to contribute to environmental protection as it relates to development.

13. The five areas in which transnational corporations can make significant contributions to environmental protection in the light of development are the following:

(a) International agreements and law, which examines how transnational corporations can contribute to the Conference agenda and support existing relevant international policy and law and emerging international agreements and commitments by Governments on major environmental issues;

(b) The transfer of environmentally sound technology, through which transnational corporations can contribute to the development of effective modalities for favourable access to, and transfer of, environmentally sound technologies to developing countries;

(c) International environmental management, where transnational corporations can contribute to the Conference agenda by implementing strategies for global management so as to incorporate environmental concerns into the economic development process, particularly examining the state of the environment in relation to their economic activities;

(d) Equivalent levels of risk and safety for the environment, health and safety throughout the enterprise, where transnational corporations can contribute to the Conference agenda by building awareness of environmental concerns throughout the enterprise and in communities through analysis and monitoring of environmental problems, timely exchange of information and assessment and anticipation of environmental risks, accidents and emergencies;

(e) Additional supportive measures, through which transnational corporations can contribute to the Conference agenda by identifying ways and means of providing new and additional financial resources, including consideration of various funding mechanisms, which would expand expertise and technological capacity for environmental protection and environmentally sound development, particularly in developing countries.

D. Environment fund

14. With regard to the proposals and recommendations concerning the establishment of an environment fund financed by transnational corporations which would support projects in developing countries (see Council resolution 1989/25, para. 16), the Centre has begun to examine the creation of such a fund through a feasibility study (see E/C.10/1990/10). The study describes how a United Nations-affiliated financial intermediary can manage the fund, which would be financed through

(a) voluntary corporate contributions; (b) a for-profit venture capital fund; and (c) a for-profit mutual equity fund. Further work in this area is required but has been temporarily curtailed owing to budgetary constraints. The Centre, however, is closely following other new international emerging schemes for environmentally oriented project financing. These include: (a) the World Bank's new Global Environmental Facility, which will provide additional concessional funding ($300 million to $400 million per annum) to lower-income countries for environmental actions with long-term global benefits regarding climate, the ozone layer, biodiversity and international water resources; (b) the International Finance Corporation's New Environmental Initiative, aimed at investing in private ventures in developing countries that reduce waste by means of equity financing and loans without government guarantees; (c) the Nordic Environment Finance Corporation's mission to provide risk capital for joint ventures in environmental technology between Nordic and Eastern European partners (operated by the Nordic Investment Bank); (d) the European Bank for Reconstruction and Development's mandate to support and revive the economies of Central and Eastern European countries, while promoting environmentally sane and durable activities; (e) the $60 million to $100 million Environment Investment Fund, sponsored by the Overseas Private Investment Corporation and managed by Kidder Peabody and Booz Allen, which will identify, invest in and support new or expanding business enterprises that sustain natural resources and practise sound environmental management in developing countries, including Eastern Europe; and (f) the Environmental Enterprises Assistance Fund, established by Winrock International and the United States Agency for International Development, which will provide venture capital for projects promoting commercially viable renewable energy and other environmentally sound technologies in developing countries.

II. ENVIRONMENTALLY SOUND TECHNOLOGIES AND PRODUCTS

15. Since 1982, the Centre has been concerned with environmentally unsafe products and processes and has participated in the publication of the Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or not Approved. The Centre, in cooperation with the Department of International Economic and Social Affairs of the United Nations Secretariat, the World Health Organization (WHO) and UNEP, is proceeding with the preparation of the fifth edition of the Consolidated List, a publication regularly used by both developing countries and industry.

16. In response to the request by the Council in resolution 1989/25, paragraph 4, the Centre has prepared a feasibility study on a directory of hazardous technologies. While the work on the collection of data for the directory on hazardous technologies has been postponed until the biennium 1992/93 owing to budgetary constraints, the Centre is undertaking three sector model case-studies that will demonstrate how complete entries in the directory would appear.

17. Based on the recent request by the Council to undertake work on the transfer of environmentally sound technologies to developing countries, the Centre has initiated a study that seeks to shed light on alternative means of transferring environmentally sound technologies to developing countries at favourable terms.

The study suggests positive and constructive approaches for responding to the ideas set out in paragraph 15 (m) of General Assembly resolution 44/228. It examines the barriers to the flow of environmentally sound technologies to developing countries, the role of transnational corporations and the various mechanisms available to industry, Government and international organizations to increase the transfer of environmentally sound technologies to developing countries.

18. The study expands on the inventory of some of the more commonly acknowledged barriers by specifying in greater detail the nature of the barriers and their relative importance in obstructing the flow of transfer of environmentally sound technologies to developing countries. Such barriers can include the lack of incentives to transnational corporations for selling environmentally sound technologies in developing countries owing to small internal markets, lack of environmental laws requiring environmentally sound technologies, or insufficient demand. Another barrier, often cited by developing countries, is the higher cost of the new environmentally sound technologies as opposed to existing "polluting" technologies, the lack of sufficient financial resources to cover the incremental costs of the new technologies or the lack of aid commitment on the part of the developed countries about environmental protection and sustainable development.

19. The study also identifies a number of alternatives for facilitating the transfer of environmentally sound technologies to developing countries. Some of these can be options using new sources of global revenue, the use of market mechanisms or investment and trade agreements, the use of regulatory systems or national tax and tariff systems. The analysis of each option covers the following points: (a) a detailed description of the option; (b) examples of existing and new technologies that might be covered by it; (c) an assessment of the benefits that would result, including the existing barriers that would be reduced through the implementation of the option; (d) an assessment of disadvantages and of requirements for the option to be effective or categories of technologies for which it might be most suited; (f) an assessment of the price benefit systems that would best align with it; (g) an assessment of the impact and contribution of transnational corporations on the option; (h) available and appropriate negotiating forums and experience.

20. Three stages of results are expected out of this project. The first will be the preparation of 30 or more executive summaries evaluating alternative means of transferring environmentally sound technologies to developing countries on favourable terms. These executive summaries (10-12 pages each) will explore the strengths and limitations of each option in the light of the barriers that currently impede the flow of environmentally sound technologies to developing countries on favourable terms and in the light of comparative impacts of distribution of the benefits of environmentally sound technologies within developing countries. These executive summaries will be made available to Governments to aid them in selecting an appropriate combination of policy and economic instruments that can be considered during the preparatory process for the 1992 United Nations Conference on Environment and Development.

21. The second outcome will be the convening of a high-level meeting between executives of transnational corporations and senior officials from developing and

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developed countries to review a draft text based on the executive summaries. This meeting is intended to serve as a starting point for direct discussions between Governments and transnational corporations on the appropriate role each can play in the transfer of environmentally sound technologies to developing countries on favourable terms. It is expected that the meeting will recommend a mix of policy and economic instruments which the experts, in their personal and professional capacities, consider to be a possible basis for further intergovernmental considerations.

22. In the third phase, the Secretary-General of the Conference may utilize the Centre's research to structure the ongoing consideration of this item in the United Nations system-wide plan for the Preparatory Committee meetings. The Preparatory Committee will then be able to draw upon the combined and coordinated efforts of the United Nations Centre on Transnational Corporations, the Centre on Science and Technology for Development, UNEP, UNCTAD, and other bodies doing research on specific policy aspects of the issue.

23. Some of the work on this project has been carried out with extrabudgetary support from the Government of Sweden and from the Rockefeller Foundation. The Centre has also participated in meetings on the transfer of environmentally sound technologies organized by UNEP in Canterbury, United Kingdom, by the Centre on European Policy in Brussels, and by OECD in Paris.

III. ADVISORY ASSISTANCE ON ENVIRONMENTAL REGULATIONS IN DEVELOPING COUNTRIES

24. The concept of sustainable development combines the issues of environment and development. Distinct policies and institutions can no longer cope effectively with these interlocked issues. Environmental protection and sustainable development must be an integral part of the mandates of all government agencies, international organizations and private sector bodies. Developing countries have expressed interest in having advisory assistance when revising their environmental laws and regulations and while negotiating contracts with transnational corporations that impact on their natural resources and on their environment.

A. Strengthening environmental institutions, laws and regulations

25. During the past year, the Centre has provided Guinea with technical assistance to strengthen its national management and sectoral planning capability and the restructuring of its natural resource sector. These activities included the establishment of laws, regulations and evaluations of contractual arrangements with transnational corporations exploiting natural resources in the industrial and mining sectors. In advising the Government of Papua New Guinea in the negotiation of petroleum and mining agreements, the Centre provided assistance with respect to environmental issues arising out of these agreements.

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B. Transnational corporations and industrial hazards disclosure

26. The work of the Centre in this area includes the publication of a study entitled Transnational Corporations and Industrial Hazards Disclosure (ST/CTC/111). 4/ The study was prepared in response to the request of the Economic and Social Council, in its resolution 1989/25, to identify ways in which developing countries might benefit from the experience of other countries in their efforts to protect the environment in relation to the activities of industry. The study addresses what many consider to be one of the most basic principles with regard to the activities of transnational corporations in developing countries: the responsibility of transnational corporations proposing to conduct industrial activities in developing countries to gather information about foreseeable risks of the activity to health, safety and the environment and to fully disclose that information to responsible government officials and to persons who would be subjected to the risks.

27. By requiring transnational corporations to disclose risk information, developing countries would be able to hold a transnational corporation accountable for risks that exceed those permitted in its country of origin or other developed countries. Disclosure would therefore permit the developing countries that act as host for transnational corporations activities to control technological risks by referencing and applying standards of developed countries and thereby fill gaps that may currently exist in their regulatory frameworks.

28. The findings of the study can give the basis for providing technical assistance for information disclosure in developing countries. This technical assistance can sensitize developing country officials responsible for environmental protection to the existing situation with regard to disclosure requirements in developed countries and facilitate the implementation of such disclosure policies in developing countries. These disclosure requirements could apply equally to local firms, national development projects and joint public-private undertakings that conduct activities that present hazards and risks similar to those posed by transnational corporations.

29. Technical assistance to developing countries could be twofold; it could serve to educate officials about the kind of environmental information that should be disclosed to the authorities by a transnational corporation proposing to set up an operation or already operating in a developing country, and it could train them to negotiate with transnational corporations when they propose foreign investment or technology transfer so that environmental protection standards and sustainable development goals are integrated in the negotiating process.

C. Phase II of the survey of corporate environmental policies

30. In phase II, the survey of corporate environmental management will concentrate on case-studies of prototypes of various environmental management systems. The purpose of the case-studies will be to advise host developing countries about what they may expect from the most environmentally sensitive transnational corporations. Based on intensive interviews at corporate headquarters and field

work that will involve interviews with subsidiaries of the selected corporations in developing countries, the studies will try to ascertain the degree to which policies of corporate headquarters are carried out by the management of the local firms. Each management system will be developed into a separate case-study. The case-studies will also outline which national policies, laws and regulations appear to be most effective in influencing corporate environmental behaviour in developing countries.

D. Hazardous waste management

31. Management of hazardous waste is another area where the Centre can play a significant role, by assisting developing countries to manage the production, transport and disposal of wastes, especially by subsidiaries of transnational corporations in developing countries. In 1989, the Centre sponsored a regional workshop in West Africa on hazardous waste policies and programmes. In the framework of the negotiations between the European Economic Community (EEC) and the African, Caribbean and Pacific (ACP) group of countries for the Fourth Lomé Convention, the Centre provided ACP with a report on the implications of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

32. A great deal of international attention has been given in recent years to the problem of transport/disposal of hazardous waste from developed to developing countries; however, little attention is being paid to the management of hazardous waste produced by industry in developing countries. Although production of hazardous waste in developing countries is in many cases unavoidable and often an unwelcome companion of industrialization, developing countries can be assisted in developing ways to encourage industrial production while minimizing the production of hazardous waste and developing effective ways of safely disposing of it.

33. The first step would be to take an inventory of industry practices of both locally owned and foreign subsidiaries in the disposal of toxic and hazardous waste. This information would be analysed and the report would evaluate factual data on conditions of production, transportation and disposal of toxic and hazardous waste both domestically produced and transborder shipped. The second part of the report would provide suggestions and recommendations on the preliminary steps to be taken towards a systematic solution for dealing with hazardous and toxic wastes in the country. Finally, the report could recommend ways in which countries, relevant organizations and institutions that possess technical and financial resources can provide expertise and support for developing the necessary capabilities in developing countries to safely dispose of hazardous waste.

IV. CONTRIBUTION TO INTERNATIONAL ENVIRONMENTAL CONVENTIONS AND AGREEMENTS

34. During the recent decade, debate on the need for international environmental conventions has intensified. In the area of atmospheric protection, there is the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol

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on Substances that Deplete the Ozone Layer. A new framework convention on climate change is currently being negotiated. The Second World Climate Conference met recently to discuss the findings of the Intergovernmental Panel on Climate Change and to adopt a draft ministerial declaration on measures that need to be taken to deal with the problem of climate change. It is hoped that some major conventions will be ready for adoption at the United Nations Conference on Environment and Development.

A. Global climate change

35. The Centre has completed a study entitled Climate Change and Transnational Corporations: Analysis and Trends (ST/CTC/112) 4/ in response to the request by the Economic and Social Council, in its resolution 1989/25, to conduct an analytic study of the main sectors of activity that have adverse effects on environmental preservation. The study focuses on six transnational energy-producing and energy-consuming subsectors and concentrates on the ways in which the activities of transnational corporations in those sectors and subsectors contribute to this environmental threat. It identifies concrete steps that transnational corporations can adopt to mitigate the damage and prevent future destruction. The overall purpose of the study is to contribute to the analysis of environmental restructuring and the requirements for a sustainable economy and to provide policy makers, especially those in developing countries, with vital information about the relationship between industrial development, the role of transnational corporations and climate change.

36. The results of the study have been presented to the Preparatory Committee for the United Nations Conference on Environment and Development at its first session and to the Second World Climate Conference. The Centre can make an important contribution in this area since approximately 80 per cent of greenhouse-generating emissions from industrial sources come from sectors with a high degree of transnational corporations involvement, and targets for the reduction of greenhouse gases will necessarily involve the activities of transnational corporations.

37. Based on its work in this area, the Centre can also provide support to developing country policy makers concerning the relationship between industrial development and global warming. The success of the climate change negotiations will largely depend on a sophisticated understanding of the full range of policy implications necessary to achieve radical reductions of greenhouse gas emissions. Developing country officials, however, may be marginalized in this debate owing to their lack of information and training in this area. They will need to confront such complex questions as: (a) how will the climate change debate affect their development plans? (b) what will be the consequences of global warming on the significant industries in their economies if no national or international action is taken? (c) in preparation for negotiations, which of their industrial sectors should they concentrate on for analysis and data gathering? and (d) with respect to their country's foreign direct investment policies, what are the political and economic implications of the various provisions and targets under consideration internationally?

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38. Policy makers in developing countries should be trained in ways to increase their effectiveness during intergovernmental negotiations in the area of environmental protection. They should be assisted in elaborating sustainable development policies for industrial sectors that have an impact on their domestic and global environment and on the issues relating to the restructuring of industrial sectors and investment decisions necessary to maintain their natural resources over the long term.

B. Biotechnology

39. The Preparatory Committee for the United Nations Conference on Environment and Development, at its first session, in August 1990, adopted a decision on the environmentally sound management of biotechnology. As requested by the Preparatory Committee, work is being undertaken "with a view to expediting the elaboration of basic guidelines on safety in biotechnology and facilitating the preparation of an international code of conduct". 5/ It was also requested that a report on the role of the private sector, particularly the role of transnational corporations, in promoting, applying and transferring biotechnology, be prepared for the third session of the Preparatory Committee.

40. Major transnational companies in the human and animal health care sectors and the agricultural and diagnostic sectors (i.e., major pharmaceutical and chemical companies) now dominate in biotechnology development as compared with the small biotechnology firms that sparked the biotechnology revolution. Owing to the fact that biotechnology is essentially a process rather than a product, transnational corporations have downstream production capacity, distribution and marketing networks, financial resources and flexibility that work to their advantage. Thus, the impact of the policies and practices of transnational corporations involved in biotechnology research and application will continue to grow.

41. The Centre can contribute to the environmentally sound management of biotechnology in host developing countries in the following ways: (a) examine the role of transnational corporations involved in biotechnologies in host developing countries, focusing on sectors of activity, trends in foreign direct investment, and health and environmental impacts of such investments; (b) design models on ways in which to enhance the participation of developing countries in the initiation and use of environmentally sound biotechnological inventions; (c) suggest alternative ways that would enable germ plasm donor developing countries to benefit from biotechnological inventions/plant varieties developed by transnational corporations; and (d) explore conditions for long-term investment and research and development commitments by biotechnology transnational corporations in developing countries.

C. Accident prevention and emergency responses

42. The Centre continues to participate in an advisory capacity in the work of the OECD environmental directorate and ad hoc intergovernmental working groups to develop guiding principles on accident prevention, preparedness and response. The

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agreed outline for the guidelines contains a section on the responsibilities of OECD-based firms operating in non-OECD countries to maintain an equivalent level of safety in those countries.

V. ACCOUNTING AND REPORTING STANDARDS FOR SUSTAINABLE DEVELOPMENT

43. The need for sound environmental corporate accountability practices increases as the transnationalization and interdependence of environmental problems grow. The best way to meet this need is through the development of international accounting standards for environmental disclosures that will, among other things, incorporate externalities. The Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting, at its eighth session, considered recommendations for information disclosure on corporate environmental measures (E/C.10/AC.3/1990/5). The recommendations cover information disclosure and make suggestions for standardizing environmental narratives, including both qualitative and quantitative information. As a follow-up to this work, the Centre has initiated a project on accounting and reporting standards for sustainable development. The project covers three interrelated areas. The first area comprises current practices concerning environmental information disclosure in the major accounting and reporting systems in use by transnational corporations. This component seeks to improve both information disclosure and methods of measuring environmental costs and liabilities. The second area concerns ways in which business enterprises can become more efficient in their use of natural resources and waste disposal methods and thus become better stewards of natural resources and the environment. This seeks to develop an acceptable valuation methodology for quantifying social benefits of economic activity in accordance with the principle of sustainable development, as well as a valuation methodology for determining the unrecorded social costs of non-sustainable economic activity. The third area is how to develop international comparable standards that can assure consistency in the disclosure of environmental auditing practices by transnational corporations. This seeks to set minimum standards for carrying out a public environmental performance report. In order to do that, the project will look at the needs of third-party users for environmental data; the various benefits of such public reports to the corporations; and methods to standardize public disclosure between countries. The outcome of the project will be policy formulation, research papers and technical assistance. This project is being carried out with extrabudgetary support from the Government of Sweden.

VI. CONTRIBUTIONS TO THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

44. The Centre has actively participated in the preparatory process for the Conference and has held regular coordinating meetings with the Secretary-General of the Conference and his staff. In addition, Centre staff have been made available to the Secretary-General of the Conference to assist in the preparation of the documents for the Preparatory Committee. The Centre attended both the working and the ministerial sessions of the conference on sustainable development in the ECA region, held at Kampala, and that on the same subject in the ECE region, held at

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Bergen, Norway. It also participated in the first session of the Preparatory Committee for the United Nations Conference on Environment and Development, held in Nairobi. It hopes to participate in and make substantive contributions to the forthcoming Preparatory Committee meetings and the associated regional conferences.

Notes

1/ World Commission on Environment and Development, Our Common Future (London, Oxford University Press, 1987).

2/ United Nations Environment Programme, Environmental Perspective to the Year 2000 and Beyond (United Nations publication, Sales No. E.88.III.D.6).

3/ A/45/16 (Part I), para. 231.

4/ To be issued as a United Nations publication.

5/ A/45/46, annex I, decision 1/17.
